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A STUDY OF THE AIR FORCE PHYSICAL FITNESS AND HEALTH PROGRAM

THESIS

Joel M. Zejdlik
Captain, USAF

AFIT/GSM/LSY/89S-47

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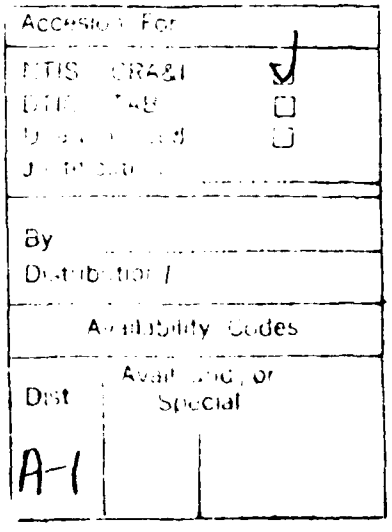
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AFIT\GSM\LSY\89S-47

A STUDY OF THE AIR FORCE PHYSICAL FITNESS AND HEALTH PROGRAM

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Systems Management

Joel M. Zejdlik, B.S.
Captain, USAF

September 1989

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ABSTRACT

The purpose of this thesis was to investigate physical fitness attitudes and perceptions of military members in a sedentary work environment. People in the acquisition management career field assigned to Aeronautical Systems Division (ASD) Wright-Patterson AFB, Ohio were polled on their attitudes on health and fitness.

Data was collected using a survey questionnaire that duplicated a Air Command and Staff College study done in 1988. That study may have had a biased sample since fitness and aerobic exercise are stressed in Professional Military Education (PME) in residence.

This study focused on people in a non-physical working environment. The day-to-day routine did not include any useful aerobic activity. It was assumed that these people would not think fitness was as important as the people coming from a training environment (PME).

Generally, the ASD group was more polar than the PME group. The ASD group was more likely to have a large percent of the people answer strongly agree and a significant number would have no opinion, while the PME group would have a overall greater number of people who answered either agree or strongly agree with very few having

no opinion. Even though the people in the sedentary working environment perceived fitness as important, they were less likely to take action to do anything about it.

A STUDY OF THE AIR FORCE PHYSICAL FITNESS AND HEALTH PROGRAM

CHAPTER I

INTRODUCTION

General Issue

The new Air Force Health Promotion Program emphasizes five main areas, focusing on smoking cessation and prevention, nutrition, stress management, prevention of drug and alcohol abuse, and physical fitness (20:10). The scope of this research lends itself to a thorough examination of only one of the topics. The topic that seems to be most pertinent is physical fitness because a person who is serious about fitness takes the other areas into account because of the effect they have on individuals who try to improve or maintain physical fitness levels. Each area either adds or subtracts from an overall fitness program. Excessive amounts of stress, smoking, drugs, and alcohol have negative effects while proper nutrition positively affects one's ability to participate in physical activities.

Dr. David Chenoweth, Ph.D., director, Health Management Associates, stressed the importance of assessing employees' needs to help determine what type of health promotion program to offer to an organization. One such way involves a "ranking grid" (Figure 1.1). The results of his national

PROGRAM RANKING ACCORDING TO INSTRUMENT SURVEY FORM

Criteria (potential for)	1st	2nd	3rd	4th	5th
	Stress Mgt	Fitness	Nutrition Education	Weight Control	Quit Smoking
Measurability	M	H	M	H	M
Impact on Mental Health	H	H	M	M	L-M
Impact on Physical Health	M	H	H	H	H
Health Care Cost-Containment	U	H	M	M	H
Attracting Many Employees	M	H	M	M	L
Short-term Success	M	H	M	M	M
Long-term Success	L-M	H	M	M	M
Visible Results	M	H	M	M	M
Professional Instruction Required	H	H	H	H	H

Key: U = Uncertain L = Low M = Medium H = High

Figure 1.1 (9:40)

Five main health related issues and how employees rate them.

study showed how employees rated each of the five main health related areas (9:40). Physical fitness is rated "High" in each of the nine different categories. From the employees' standpoint, physical fitness is rated most important.

Because of the importance employees place on physical fitness, companies are promoting and designing fitness facilities for their employees. In the United States it is estimated that 50,000 business firms promote physical activity (17:511). Employers are concerned with activities that provide the greatest payback to the organization and are discovering that it is much cheaper to keep their employees healthy rather than pay rising medical and insurance costs (20:15). The following are examples three companies are taking to provide facilities and opportunities for their employees. While some organizations are fortunate enough to have facilities on site, other organizations have contracted out with local health care facilities. The Copps Corporation of Stevens Point, Wisconsin, asked help from a local YMCA. The corporation contracted with the YMCA to provide a multi-faceted program in which nearly half of the Copp's employees participated. Adolf Coors remodeled a nearby vacant grocery store to houses their fitness facility. Another company in North Carolina converted an existing on site location to a 5000 square foot exercise area (8:41). Air Force employees are fortunate that current Air Force installations have fitness and exercise facilities for military and civilian employees.

Physical fitness is not a new topic in the Air Force. Since the Air Force's fitness program consists of only a 1.5 mile run given once per year, military physical fitness experts Major John Youngblood, the Air Force's Pentagon-based health promotion coordinator, and Captain Kimberly Ritsche, Chief of Military Fitness at the Military Personnel Center (MPC), have investigated possible changes to the current Air Force program. The five pronged Wellness program is a by-product of recent research. Also, Captain Ritsche offered a recent research effort completed at Air Command and Staff College (ACSC) in April 1988, by Majors Torgeir Fadem and Major Allen McReynolds. The two researchers surveyed military members attending professional Military Education (PME) in residence on the attitudes about the effectiveness of the Air Force physical fitness program. This effort was comprehensive in respect to content but biased in respect to the population selected. Fitness is stressed in PME programs. Running and intramural programs are highly encouraged and supported by the students and faculty alike, while people in the Acquisition Management career field spend a majority of their time behind desks. The individual Air Force member does not get any useful aerobic fitness activity in his day-to-day routine. Physical fitness may not be stressed and supported throughout the year. The only recognition comes once per year for the annual run and weight check. People question whether this constitutes a sound physical fitness program.

With the employee and the employer (to include the Air Force) taking a greater interest in fitness it is interesting to note that only an estimated 20 percent of the North American population exercise intensely and regularly to produce cardiovascular fitness, while another 40 percent exercise enough to receive at least some benefit (17:511). What this means is that people are beginning to understand the importance of healthy lifestyles only they have not internalized it enough to personally do anything about it.

Specific Problem

By examining employee interest, employer interest, and Air Force interest in physical fitness programs, one can readily see why this is an important topic. Keeping these factors in mind, is the current voluntary Air Force physical fitness program effective in meeting individual members needs specifically those in non-physical jobs? If not, what are the weaknesses in the Air Force program, and what are possible suggestions for improvements?

Investigative Questions

To solve the above problem, individual Air Force members in the Acquisition Management career field were compared to individuals participating in Professional Military Education (PME) in residence programs.

Specifically, the following physical fitness related investigative questions are addressed.

1) How do the attitudes of Air Force members in the

Acquisition Management career field compare to attitudes of Air Force members in a training environment (PME in residence)?

2) What are Air Force members suggestions for improving the existing Air Force fitness and weight control program?

Scope

This research effort focuses on the physical fitness practices of Air Force military personnel stationed at Wright Patterson AFB, Ohio. The study will not cover all of the Air Force's Health Promotion Program issues because of limited resources to conduct this research. The survey will investigate individual attitudes about physical fitness related practices. Additionally, this study will compare the results with similar data from a 1988 Air Command and Staff College study done on Air Force members participating in PME.

Chapter Summary

This chapter introduced physical fitness and the need to study people in sedentary life styles. Support is needed for members to realize the true importance of proper fitness lifestyles. The Air Force is beginning to recognize this with it's new Health Promotion Program. Chapter 2 will review the current literature on physical fitness, starting with the impact on civilian corporations and leading to fitness applications to the Air Force. Chapter 3 discusses the research methodology used to collect and analyze the data. Chapter 4 presents and analyzesthe research findings while Chapter 5 provides the conclusions and recommendations based on the data and analysis.

CHAPTER II

LITERATURE REVIEW

Introduction

The purpose of this chapter is to review the current literature which applies to the subject of physical fitness. It includes a background on physical fitness which consists of a definition of physical fitness, a discussion of the standards used to measure it, the relationship between physical activity and aerobic exercise, and why fitness is important. The literature review examines attitudes of the general public to get an understanding of how the average American feels about health and fitness. The next section of the literature review discusses what the federal government is doing. The final section deals with the attitudes of the United States Air Force; this is the most pertinent area because this research focuses on the attitudes of Air Force personnel in PME (training) and Acquisition work environments.

Physical Fitness Background

Prior to examining the literature dealing with attitudes toward physical fitness, it is essential to determine what fitness is and why it is important. This section examines the relevant literature to define fitness and determine appropriate standards to measure it. It also examines the critical relationships between fitness and aerobic exercise.

Finally, the literature is cited concerning benefits associated with physical fitness.

Definition of Physical Fitness

Physical fitness has become an increasingly important component of civilian and military lifestyle. However, despite the increased interest in being fit, people are generally unaware of what fitness really is. This section presents several different definitions of fitness.

One definition found in Military Medicine says. "Physical fitness is defined as the ability to carry out daily tasks with vigor and alertness and without undue fatigue" (26:426). Medical experts agree that physical fitness is the ability of the body to transfer oxygen to the working muscles. "VO2 max is a reflection of maximal aerobic capacity during working conditions involving continuous performance by large muscle groups" (24:34). Webster's Dictionary defines fitness as; "being adapted to the environment so as to be capable of surviving." The President's Council on Physical Fitness considers "fitness as the ability to do work with vigor and pleasure without undue fatigue" (24:34). A more medical definition defines "fitness in terms of survival from coronary artery disease" (24:34). This researcher believes that a combination of the above definitions will suit this research best. The definition that will be followed throughout this study is

that physical fitness is a state of being able to cope with physical exertion without detrimental effects to the body.

Standards for Evaluating Physical Fitness

A general understanding of physical fitness is important in determining standards for evaluating fitness. Medical researchers say that a person's performance capacity depends largely on his ability to take up, transfer, and deliver oxygen to the working muscles (26:426). As defined above physical fitness is the ability of the body to transfer oxygen to the working muscles and VO2 max is a reflection of maximal aerobic capacity during working conditions. According to the American Heart Association, "VO2 max will increase in most individuals who faithfully follow a regular training program" (26:431). The biggest problem researchers face is trying to quantify the results of a physical fitness and health program. Results are extremely difficult to measure. Most researchers in this area have relied on surveys of self reported health and fitness information. This research also relies on self-reported data collected on the perceived importance of health and fitness to military members. Since a reliable standard is necessary to accurately portray the picture of health in the Air Force, researchers are trying to develop a accurate inexpensive way to measure fitness levels.

It is hard to argue the importance of VO2 max in determining the physical condition of individuals. One of the major drawbacks of the approach is the expense in terms

of manpower, time, and money. It is extremely time consuming and expensive. There are other standards that are used to measure fitness levels. The Armed Services use a timed run matched against a pre-set standard to asses the fitness of it's members (16:9). There are also strength tests, stress tests and endurance tests. The most beneficial standard in terms of V02 max is some level of aerobic activity.

Relationship Between Physical Fitness and Aerobic Exercise

People partake in various exercise or physical training programs throughout their lives, an exposure which could increase V02 max. Exercise and training programs vary from calisthenics learned in grade school, to a more modern jazzercise/aerobic dancing, or just a pick-up game of basketball. Each activity if done with regularity and intensity can lead to an increase in V02 max (26:431). However, to get maximum benefit from physical fitness training, some type of aerobic exercise should be undertaken. Aerobic activity is defined in terms of bringing the heart rate up and sustaining it for at least 20 minutes. To receive any aerobic benefit the activity must be done at least three times per week. Dr. Kenneth Cooper in his book The New Aerobics defines aerobic exercise as follows:

> Aerobics refers to a variety of exercise that stimulate heart and lung activity for a time period sufficiently long enough to produce beneficial changes in the body. Running, swimming, cycling and jogging are typical aerobic exercises. The main objective of an aerobic exercise program is to increase the maximum amount of oxygen (V02 max) that the body can process within a given time. This is called aerobic capacity.

> It depends on an ability to 1) rapidly breath large amounts of air, 2) forcefully deliver large volumes of blood and 3) effectively deliver oxygen to all parts of the body. In short, it depends upon efficient lungs, a powerful heart and a good vascular system. Because it reflects the conditions of these vital organs overall, the aerobic capacity is the best index of physical fitness. [12:15-16]

Exercise that increases VO2 max leads to better health.

Importance of Physical Fitness

Most people will not argue over the importance of physical fitness; the argument is whether or not people have the internal fortitude to do something about it in their own lives. The literature points out the importance of exercise as a part of total well-being. The problem is a matter of trying to get people involved in programs of their own. "The Surgeon General of the United States has a national goal of 60% of the adult population engaging in regular vigorous physical exercise by 1990" (2:921). However, a recent survey shows that less than 20% of the American population partake in regular aerobic exercise programs (29:194). If the overall goal is to get people involved in fitness programs for their own benefit and overall health then fitness can be considered a form of preventative medicine as pointed out by Doctors Leavell and Clark. They found that there are three levels of disease prevention using the principles they developed in the 1950's and coined "epidemology". These are primary, secondary, and tertiary (31:12-13).

1. Primary prevention occurs before disease or illness occurs. (health promotion and protection from disease)

2. Secondary prevention begins after disease is present. (diagnosis and treatment)

3. Tertiary prevention begins when the condition has stabilized. (return person to optimum level of functioning) [31:12-13]

It is the opinion of this researcher that fitness practices are important in primary prevention. That is the premise of this research. Maloney's research suggests that "consistent findings relate physical fitness to increased work capacity, to improved psychological work capacity, and to improved psychological well being" (26:432). This ties it all back together in terms of tangible benefits for the employee and the employer (Air Force).

Attitudes

This research deals with the attitudes people hold about physical fitness and health. The people in the civilian sector are pursuing programs for employees, the United States government is as well, and the Department of Defense, more specifically the Air Force are incorporating changes to their health programs. Each of the three areas had specific fitness related contributions to be recognized.

Civilian Sector In the civilian sector, studies show an increasing number of firms are offering different types of wellness programs to help offset increasing health costs. As an example three major US corporations, IBM, Rockwell International, and Johnson and Johnson are active in promoting physical fitness. IBM is sponsoring educational

courses. Rockwell International has 50 acres of fitness facilities (18:1). J & J has started its "Live For Life" program (31:13). This program educates J & J employees on the importance of a healthy lifestyle. Exercise is essential, but it is not the only factor which affects individual health. Classes now being offered include smoking cessation, weight control, stress management, nutrition, and blood pressure intervention (2:922). As a result of promoting wellness, an employer can expect the following benefits:

> (a) increased ability to attract competent employees
> (b) improved attitudes and loyalties
> (c) a reflection of the firm's concern for the non-work aspects of employee lives
> (d) indirectly, increased productively [17:517]

Industry would like to see a strong connection between physical fitness and productivity, absenteeism, commitment, and turnover. Loren Falkenberg, Ph.D., Professor in the Department of Management in Organization and Human Resources, University of Calgary, found in the review of previous studies that participants thought they performed better at work after an employee fitness program. Since the data were subjective, Falkenberg also found the correlation between fitness and increased productivity questionable and weak at best (17:515). There is no doubt that the individuals in the study perceived an improvement even though it is extremely difficult to objectively measure (17:515).

Falkenberg developed and tested a model (see Figure 2.1) of the relationships among physical fitness, physical

activity, and employee fitness programs including work and individual variables (17:517). Falkenberg said:

> A critical feature of this model is the separate delineation of the benefits of exercise at the individual employee level and the advantages for the organization of supporting employee fitness programs. If an employee exercises on his/her own (outside any organizational facility or without financial assistance), both the individual and the organization derive the benefits of the model. [17:517]

The model points out the short and long term impacts of physical exercise. The availability of fitness facilities provide workers an opportunity they might not o'herwise take advantage of. It provides employees more flexibility to improve their physical well-being while the employer benefits from the workers increased health. Falkenberg also stated that the organization indirectly promotes increased loyalty from the perception of the employee (17:519).

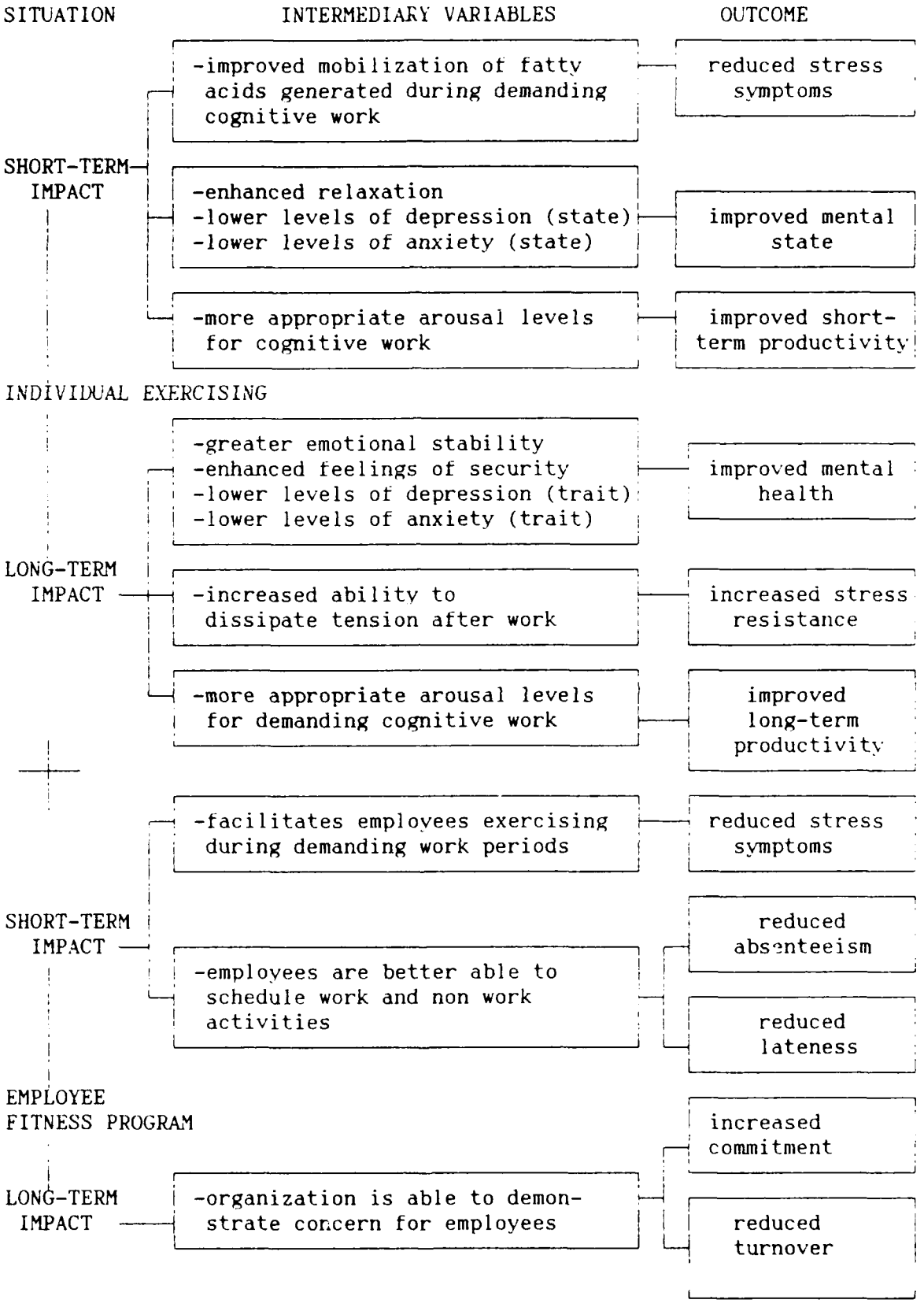


Figure 2.1 (17:517)
Relationship between individual exercise & employee fitness

Another study found the relationship between fitness and absenteeism more measurable: Participants in a fitness program had a significantly lower rate of absenteeism (22% or less) than either low level participants or non-participants (17:515). The author stated the reasons for the decrease were "(a) increased fitness levels lead to improved health, and (b) healthier employees are less likely to be absent" (17:515). Another study conducted by Goodyear in Sweden showed that absenteeism decreased by 50 percent when a employee fitness/lifestyle program was introduced (31:16).

Employee fitness programs have been associated with improved commitment and turnover. One researcher said:

> Given the rising participation in physical activity, employee exercise programs address the personal needs of many employees. Thus by supporting an employee fitness program, a company can demonstrate concern for the employees' health and non-work needs. [17:516]

A different study showed that the participants' turnover rate in an employee fitness program was 13% less than non-participants (17:516).

> Employee fitness programs provide an opportunity for organizations to demonstrate concern for employees. If employees perceive the organization is concerned about their welfare, they may develop more loyalty to the company, indirectly leading to reduced turnover. [17:519]

Employees perceive that they receive benefits from fitness programs. The employer benefits from finess in terms of reduced turnover and absenteeism. If the workers are not sick as often it can lead to reduced health care costs.

Health care costs are also having a greater influence on companies of all sizes. The employer pays an enormous price in terms of absenteeism, turnover, retraining, and decreased productivity (31:15). To offset increasing health care costs companies are recognizing the importance of wellness and needed lifestyle changes. In the last five years, the General Motors Corporation has spent three times as much on health care costs as for steel to manufacture automobiles (28:S40). Virgina Walker, Registered Nurse and company fitness advisor stated, "Business can help improve the nation's health in human and economic terms by adopting programs and policies in the workplace to keep people well" (31:15).

With an understanding about the importance of physical fitness, companies around the world are paying significant amounts in terms of actual dollars and manpower to bring the health of their employees up to a higher standard. Charles Kittrell, vice president of Phillips Petroleum and special advisor of the President's Council on Physical Fitness and Sports, makes the point on Phillip's comprehensive fitness program:

> At Phillips, our overall health insurance costs are below the national average, and have been for a number of years... still the numbers are not the main reason corporations should support fitness. To me, the main reason is that fitness helps people live richer, fuller, and longer lives. [21:54]

Following this look at civilian attitudes; the next area of this literature review covers what the United States

government is doing for it's employees and the American public in general.

Federal Government The United States Federal Government is paralleling the civilian sector in their effort to promote fitness and wellness to it's employees. Health care costs are prompting the government to promote health and fitness. In 1982 $322 billion was spent on health care in the United States, almost 10% of the Gross National Product (28:S40).

> Heart disease, cancer, and stroke are the big killers, which appear to be preventable by a change in behavior including more exercise. Because of this shift in health trends, lawmakers are urging the federal government to focus on prevention rather than treatment. [29:190]

The federal government is aiming its efforts both at active school age children and sedentary adults. Kathryn Simmons in a study on the Nation's fitness found; "More than half the adult population is leading a sedentary life style, defined as a life-style that includes less than 20 minutes of leisure time activity three times per week" (29:194). The President's Council on Physical Fitness and the Surgeon General's office are diving headlong into combating the problem of an inactive adult population in the United States.

The federal government has launched a fitness program for its three million workers nationwide. In April 1988 the Office of Personnel Management (OPM) issued new guidelines that give federal agencies broader discretion in using appropriated funds to develop or expand fitness programs.

One expert said: "It's going to make it much easier for agencies to have fitness facilities within the work site" (29:195).

The Federal Government has the overall responsibility of insuring that the American people are given every opportunity to pursue a healthy lifestyle. Medical care programs are one example and support of work related health programs may be another way. The next section deals with the attitudes of the Air Force.

U.S. Air Force In looking at the trends of the civilian work force and the parallel movements of the federal government; one must also include a look at the military. The military services have the responsibility of preserving the freedom the American people are accustomed to. The Air Force must ensure that it's members are physicaily fit enough to answer a call to combat if that freedom is challenged. As a result, the Department of Defense is often the leader in areas of fitness and exercise.

> The nature of military duty requires that a high level of physical fitness be maintained for successful job performance. The soldier may suddenly be called upon to endure long and emotionally or physically stressful situations which are inherent in the combat environment. [26:426]

In 1984 Secretary of Defense Casper Weinberger issued a directive aimed at improving the health of the military: "This directive mandates activities intended to support and influence individuals in managing their own health through

lifestyle decisions and self care" (18:1). In 1988 another major DOD study found that the services were not adequately reporting the fitness levels of the members. The requirements are there and yet the services were not meeting them. The study concluded that military personnel are not adequately trained on the importance of physical fitness programs (22:114).

Research suggests that today's Air Force physical fitness standards are inadequate. Recent research studies showed individual Air Force members were not satisfied with the program as administered. The standards are perceived as being low and military members were not challenged. One respondent to an AFIT survey said:

> I feel there is no physical fitness program in the Air Force. Running 1.5-miles once a year does not prove a thing. Physical fitness has to be daily thing. I recommend a mandatory, daily program with group participation in calisthenics, running, etc. [27:144]

Air Force direction is found in AFR 35-11 and states:

> 1) Have a healthy & efficient military force
> 2) Promote the well being of all members without undue risks to their health.
> 3) Enhance the overall image of an effective military organization [30:Para 1a]

The regulation adds that the specific objectives of the annual physical fitness test and weight check are to insure that all members meet and maintain a reasonable level of physical fitness (30:Para 1e). The objectives in AFR 35-11 provide minimal direction and no real specifics on how one becomes physically fit. The regulation may not be complete and comprehensive enough to insure Air Force members keep

physically fit. The lack of formal direction could put the burden on the individual to maintain or develop a physical fitness program.

To combat the problem of wellness, the Air Force has developed a new program to develop fitness among its members. David Givans in an article for the Air Force Times reported, "The primary goals of the Air Force Health Promotion Programs are to improve readiness and increase combat effectiveness" (18:1). Air Force leaders have the responsibility to ensure that the troops are fit and capable of service (in or out of combat). The National Defense University (NDU) in Washington, DC, is educating senior service members on the importance of health and fitness (14:290). Dr. Deuster, PhD did a study of the senior service officers attending the NDU. She found that: "The goal of the NDU Health/Fitness Program is to promote the philosophy that 'fitness is readiness'" (14:292). The military service leaders have the responsibility to use this knowledge to attempt to instill at least a minimum level of physical fitness in Air force members. LTC Maloney, MD concluded in an article in "Military Medicine," "Military personnel should get a sense of professional accomplishment since physical fitness is a professional requirement" (26:432). The biggest problem researchers face is trying to quantify the results of a physical fitness and health program and results are extremely difficult to measure.

In 1981 Captain Robin Schellhous examined the Air Force's Physical Fitness Program. He tried to assess the characteristics and programs that affect individual physical fitness. He found that generally Air Force members were dissatisfied with the program. He said, "Indeed one of the most significant conclusions that can be drawn from the data is that most Air Force members would support a more effective physical fitness program" (27:91). People did not feel the current program as administered was adequate to maintain proper aerobic fitness levels (27:90-96).

In 1984 two Air Command & Staff College Students, Major Gary Boyle and Major James Clem, researched the relationship between physical activity and productivity. The two Majors wanted to match Air Force demographics characteristics against a national health survey (3:8). What they found was;

> The United States Air Force Health Survey demonstrated that the number of health habits practiced by United States Air Force personnel is positively related to their self-assessment of general health. [3:79]

Boyle and Clem went concluded, "Physical activity appears to influence productivity in three ways; increased energy, positive attitudes and feelings, and better health" (3:85). Research consistently suggests that improved physical health directly corresponds to improved attitudes toward work and the organization.

In 1987, Captain Kimberly Allen another AFIT student, did research on the health practices of military and civilian employees of Ogden Air Logistics Center, Hill Air Force Base,

Utah. The objective of her study was to examine six health related practices including, body weight, eating breakfast, hours of sleep, smoking, alcohol consumption, and strenuous physical activity. Captain Allen found that both military and civilian employees are generally concerned about their health. One key difference was in the area of health and fitness. Captain Allen said:

> Military members reported more strenuous exercise then civilians. One possible explanation for the greater percentages of military members over civilians who exercise regularly is the requirements that military members have to maintain weight standards and to pass an annual aerobics test. [1:72]

One might suggest that the requirement on the military member makes him more likely to partake in a physical fitness program. However, Captain Allen went on to say,

> Most of the comments provided (by military members) centered around the belief that the Air Force pays only lip services to physical fitness. Persons felt that if the Air Force is serious about fitness then there should be a willingness to devote more time to allow employees to exercise during work. [1:74]

Captain Allen found that people felt physical fitness levels are required for proper job performance in all areas. People did not feel the annual aerobics test was a proper indicator of aerobic conditioning.

In April 1988, the most recent research effort was completed by Major Torgeir Fadum and Major Allen McReynolds of the Air Command and Staff College. Their study investigated the effectiveness of the current Air Force Fitness Program and the potential effectiveness of program changes. They surveyed classes at the Air War College (AWC),

Squadron Officer School (SOS), Air Command and Staff College (ACSC), and the Non-Commissioned Officer Academy (NCOA).

As part of their literature review, Major's Fadem and McReynolds found that the Air Force was lagging behind the other services in respect to the completeness of a fitness program. Each of the other services stressed fitness significantly more than did the Air Force. Figure 2.2 summarizes the fitness programs required by each service (16:9).

ARMY	AIR FORCE
- Semiannual testing - 2-mile run - Sit-ups - Push-ups	- Annual testing - 1.5-mile run or 3-mile walk
NAVY	**MARINE CORPS**
- Semiannual testing - 1.5 mile run or 500-yard swim - Sit-ups - Push-ups - Sit-&-reach flexibility - Body-fat measurements	- Semiannual testing - 3-mile run (men) or 1.5-mile run (women) - Sit-ups - Pull-ups (men) or flexed-arm hang (women)

Figure 2.2 (16.9)

Comparison of the Services fitness programs.

The research of the Air Force's fitness program showed the Air Force's program to be the least comprehensive when compared to the requirements of the other military services. The key differences between the military service's fitness programs can be summarized as follows:

1. The other services test more frequently.

2. The Navy & Marine Corp specifically encourage use of duty time.

3. The Marine Corps has a mandatory 3 hours per week.

4. The Navy requires the results of the latest fitness report in the officers or enlisted persons evaluation report. [16:9-10]

Major Fadam and Major McReynold concluded that Air Force members are not satisfied with the current fitness program. Their survey reveled, "Even when properly administered, the test failed to adequately test aerobic fitness, and it fails to encourage individuals to maintain physical fitness throughout the year" (16:29). The researchers found evidence that nearly 90 percent of the Air Force members surveyed would support enhancements to current fitness program.

There is an underlying theme stressing the importance of aerobic fitness in all of the research studies. The Air Force seems to lag behind the other services in the military's quest for a force that is ready to meet the physical fitness challenges of today and surpass those of tomorrow.

Chapter Summary

There are many benefits to physical fitness. Exercise can be a preventive measure to help reduce some of the "big killers," and can be one of the most inexpensive and enjoyable forms of preventive medicine. The benefits are there to be realized by civilian and military alike. The

data show that it does not take much time or effort to get the benefit from an exercise program.

This research effort replicates the survey given to military members assigned to a training environment. These military members are reminded daily of the importance of health and fitness with highly encouraged running and intramural programs. While military members in a sedentary work environment may not get the same encouragement to become and stay fit.

The findings in the literature are not achieved with quantifiable and easily measured data. Civilian corporations and the U.S. government would like to see quantitative data which proves fitness programs that increase productivity and commitment also decrease absenteeism and turnover. What the literature does say is that physical fitness and wellness programs do have definite, positive influences on individual well-being.

When major corporations, the U.S. government, and the US Air Force recognize the needs of the individual, they are strengthening the positive attitudes an employee has towards his employer. As pointed out earlier in this research the findings relate physical fitness to perceived increased work capacity, to improved psychological work capacity, and to improved psychological well being (26:432). Physical fitness is important to the individual and the problem for employers is to try to quantify the results. By doing so, the employer

will reap the benefits of a more physically and psychologically fit employee.

This chapter reviewed the current literature on physical fitness as related to civilian companies, the federal government, and the United States military. All of these organizations benefit from increased fitness levels of their employees. The objective of the study presented in the following chapters is to examine the attitudes of the military members on the fitness program. This is for a better understanding of how the attitudes of people in a working environment compare to those in a training environment where fitness is stressed and taught. Chapter 3 will discuss the methodology required to collect and asses the data.

CHAPTER III

METHODOLOGY

Chapter Overview

This chapter describes the methodology used to collect and analyze the required data to answer the investigative questions.

1) How do the attitudes of Air Force members in the Acquisition Management career field compare to the attitudes of Air Force members in a training environment (PME in residence)?

2) What are Air Force members suggestions for improving the existing Air Force fitness and weight control program?

The methodology used in describing the data collection method will be discussed first. This will be followed by a discussion of the target population, the sampling plan, and the statistical tests used to analyze the data and answer the investigative questions and ultimately answer the problem.

Data Collection Method

There are many different ways that data can be collected. For this particular study a survey was used to collect data because it allowed the researcher to get the largest sample of Air Force members with varying backgrounds and opinions and the lowest associated cost. Emory, in his book Business Research Methods, stated; "The great strength of questioning as a data collecting technique is its versatility (15:158). Emory goes on to say, "Surveys tend to be more efficient and economical than observation. Surveying

can expand geographical coverage at a fraction of the cost and time required by observation" (15:158). Harold Kohl in his article "A Mail Survey of Physical Activity Habits as Related to Measured Physical Fitness," stated, "Survey techniques provide useful data concerning the relations between health habits and disease and disability in free living populations" (23:1228). The researcher went on to say, "It is possible to estimate exercise behavior efficiently and inexpensively in large populations by using simple questions in a mail survey" (23:1238).

Surveying also has shortcomings. By using this technique the researcher is relying on the subjects willingness to cooperate. The overall response rate for mail surveys tends to be low and the researcher loses some of the flexibility that personal interviews offer. However, as Emory states, "The personal interview method is costly and time-consuming and the flexibility can result in excessive interviewer bias" (15:183).

Physical fitness is not a new topic and various surveys have attempted to determine how Air Force members feel about the physical fitness program. As mentioned in the two previous chapters this research effort will replicate the research completed by Majors Fadem and McReynolds, which centered around people in a training environment. They surveyed classes at Squadron Officer School (SOS), Air War College (AWC), the Senior NCO Academy, and ACSC on the

effectiveness of the Air Force fitness program. Their survey reinforces concerns of leaders and members alike.

Their population provided a cross-section of the overall Air Force population because of the backgrounds of th people who attend the schools. However, a training environment could have a significant bias towards fitness because of the school selection requirements. Air Force members are screened prior to arrival and encouraged as well as required to participate in sports and aerobic fitness activities. This study focuses on the individuals work environment.

Survey Instrument

The survey questionnaire used in this study was identical to that used by Fadem and McReynolds. A copy of the survey can be found in Appendix A. It had two main sections with each section further divided into two more sections. The initial part of the survey dealt with background information to include rank, sex, age, average number of weekly aerobic sessions over the past year, and current estimated level of fitness. This was used to check on the similarities of the two groups. The next section of the survey asked the participants to rate their personal attitude about physical fitness. These questions focused on fitness as part of a lifestyle, perceived psychological benefits, use of duty time, aerobic exercise as part of the USAF program, strength, and body weight.

Attitudes on the current Air Force fitness program made

up the third section. These questions asked the respondents to question fitness as related to wartime, peacetime, fairness of the test administration, impact on duty time, maintaining fitness throughout the year, and importance of unit commanders support. Section four asked the survey respondents to consider certain changes to the program and rate them. Here the respondents were asked about future requirements for both men and women, the addition of push-ups and sit-ups, frequency of the testing, mandatory reporting of fitness data, and actions a unit commander might take. The last question asked the respondents to write in any suggestions for improvement and comments on the overall Air Force physical fitness program.

The survey was given to Air Force members in sedentary duty environments. These people are not reminded daily of the importance of health and fitness. The day-to-day life style of a work environment produces significantly different results. Evaluating the Air Force's program in a non-training environment will determine if Fadem and McReynolds findings hold for individuals pursuing normal, day-to-day duties, especially in a more sedentary environment.

Target Population

The target population for this survey consists of active duty members of the United States Air Force assigned to Aeronautical Systems Division (ASD), Wright Patterson AFB, Ohio. The population included male and female members ranging from enlisted ranks to officers up to the rank of

Colonel. Attributes of the population measured included age, rank, sex, height, weight, and physical fitness test score. These were taken to determine if the demographics of this survey are similar to that in the Fadem and McReynolds study. This survey population was selected because it represents a large sample of Air Force individuals and also because of the proximity to the researcher, easier follow-up, increased response rate, availability of a local data base, and the decreased cost of local mailing.

Sampling Plan

A random sample was taken from the selected ASD/WPAFB population. The following formula was used to determine the sample size necessary to be drawn from the WPAFB population to give a 95 percent confidence level:

$$n = [N (z2) * p(1-p)]/ [(N-1) * (d2) + (z2) * p(1-p)]$$

where:

n = sample size

N = total population size

d = desired tolerance (.05)

p = maximum sample size factor (.50)

z = factor of assurance (1.96) for 95 percent confidence level

This formula yielded a desired sample size of 234 people. Since the sample size is comprised of WPAFB employees, a local data base called Desire provided the individuals names

and addresses. It also provided a probability sample based on the last digit of the individual's social security account number.

Based on the desired sample size and an estimated response rate of 60 percent 384 surveys were mailed out. There were 286 respondents who took the time and effort to complete the survey. An overall response rate of 74.5 percent was achieved with this survey. Also 121 people took the additional time and effort to write in comments and suggestions for improvement to the Air Force's Physical Fitness and Health Program.

Statistical Tests

The responses were analyzed using the computer programs BASS, Quattro, and Statistix. The BASS program computed the numbers and percentages of each nominal or ordinal survey question. Questions dealing with interval or ratio data were analyzed using the mean, standard deviation, standard error, and minimum and maximum values. With Statistix, a Chi-Square value and probability were computed for each relationship between the samples.

The investigative questions deal with the relationship between the two samples. The background data were analyzed to determine whether or not there were any differences between the two samples. The Bass program gave descriptive statistics which were used to compare the two samples against each other. If there were differences then the differences were analyzed to determine the impact on the results for each

question. The remaining data were analyzed and tested using the Chi-Square test to determine at a 95 percent confidence level if there were any significant differences between the two samples.

The null hypothesis is that there is no significant difference between the two populations. The alternate hypothesis states that there is a significant statistical difference between the two groups. If the probability associated with obtaining a 95 confidence interval is less than .05 one would reject the null hypothesis and accept the alternate hypothesis that there is a difference. Conversely, if the probability is .050 or greater we would fail to reject the null hypothesis with 95 percent confidence. Below is an example of Statistix program output for the Chi-Square test. The test data for each question is presented in Appendix B to this report.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

VARIABLE

CASE		Q7A	Q7B	ROW TOTALS
1	OBSERVED	19	3	22
	EXPECTED	18.00	4.00	
	CELL CHI SQ	0.06	0.25	
2	OBSERVED	19	2	21
	EXPECTED	17.18	3.82	
	CELL CHI SQ	0.19	0.87	
3	OBSERVED	29	14	43
	EXPECTED	35.18	7.82	
	CELL CHI SQ	1.08	4.88	
4	OBSERVED	562	102	664
	EXPECTED	543.19	120.81	
	CELL CHI SQ	0.65	2.93	
5	OBSERVED	621	157	778
	EXPECTED	636.45	141.55	
	CELL CHI SQ	0.38	1.69	
COLUMN TOTALS		1250	278	1528

OVERALL CHI SQUARE 12.97
P VALUE 0.0114
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Figure 3.1
Chi-Square test

The program provides an overall Chi-Square value and an associated probability value (P Value) that is used in the hypothesis testing. There are also individual cell Chi-Square values that can be used to determine where the significant differences actually are. In the above case one would reject the null hypothesis because the P value (.0014) is less than .05. The significant difference lies in cell

number 3. One could use this to determine where the differences of opinion are between the two groups.

Chapter Summary

This chapter analyzed the methodology put forth to investigate the relationship between individual fitness and some reported data. A survey was used to collect the data. The population of interest was active duty military personnel stationed at WPAFB, Ohio and assigned to ASD. The final two areas of the chapter dealt with the sampling plan and the statistical tests needed to evaluate the collected data. Chapter IV covers the research findings and analysis.

CHAPTER IV

RESULTS

Chapter Overview

This chapter presents the findings of the Physical Fitness Survey given to the Air Force members assigned to Aeronautical Systems Division (ASD). Background information is presented for the two groups of survey respondents. The results were used to compare the ASD respondents to the people in the training environment (PME). The comparison was used to see if the groups are similar or diverse. Also included was an evaluation of the survey respondents answers The answers were grouped by attitudes towards fitness, an assessment of the current Air Force program, proposed changes to the current program, and effect of changes a unit commander might take. The answers were statistically analyzed with descriptive statistics and Chi-Square tests. These statistical tests were used to analyze the findings to ascertain differences in Air Force members in the Acquisition career field and those in a training environment.

Background Information

Background data was collected for comparison of the two samples. Each table presented below gives the ASD survey results and a column representing how the students attending Professional Military Education (PME) in residence answered the questions.

Survey Question 1. Table 4.1 is a distribution of the ranks for the ASD survey respondents and the percentages for the PME respondents. The ASD sample is close to the original survey. The one major difference is the higher percentage of senior enlisted. This is expected because the PME school surveyed is for senior enlisted personnel. This should not present any major problems since it represents a small portion of the overall group. The other categories are similar.

Table 4.1

DISTRIBUTION OF RANK

RANK	Frequency	Cum Freq	Percent	PME Percent
E-1 - E-3	7	7	2.448	0.05
E-4 - E-6	25	32	8.741	0.15
E-7 - E-9	12	44	4.196	17.90
O-1 - O-3	155	199	54.196	49.50
O-4 - O-6	87	286	30.419	32.10

Survey Question 2. Table 4.2 is for gender. From this table one can see that a majority of the respondents from both groups are men and the ASD sample closely matches the original survey.

Table 4.2

SEX BREAKDOWN

SEX	Frequency	Cum Freq	Percent	PME Percent
MALE	255	255	89.20	88.90
FEMALE	31	286	10.20	11.00

Survey Question 3 (Table 4.3). Since a majority of the military stay a maximum of twenty years in the service, one

would expect that the ages fell where they did. The ASD survey had a higher percentage of people under 30 years old because there were more Airman and Company Grade Officers. For an unknown reason, 20 percent of the ASD respondents chose not give their age. This makes it difficult to asses the true distribution of age in the ASD sample for comparison with the PME sample. However, since this analysis did not use age for any statistical comparison, the impact should be minimal.

Table 4.3

AGE OF THE RESPONDENTS

AGE	Frequency	Cum Freq	Percent	PME Percent
N.A.	55	55	19.231	0.10
UNDER 30	96	151	33.566	30.20
30 - 39	90	241	31.469	52.20
40 - 49	45	286	15.734	17.30
50 or older	0	286	0.000	0.20

Survey Question 4. Table 4.4 presents the average number of reported aerobic sessions per week over the past year. Over twenty percent of the respondents chose not to answer this question. This may suggest some form of distrust or disinterest by the ASD group. As expected the training environment reported they exercised more frequently than the ASD group.

Table 4.4

AVERAGE AEROBIC SESSIONS IN LAST YEAR

SESSIONS	Frequency	Cum Freq	Percent	PME Percent
Don't Know	66	66	23.077	0.30
< 1	52	118	18.182	22.50
1 - 2	53	171	18.531	26.60
3 - 4	81	252	28.322	35.60
5 - 6	15	267	5.245	8.10
> 7	19	286	6.643	6.90

Survey Question 5 (Table 4.5). This question queried respondents on whether or not they have attended PME in residence. This was important because of the comparison between the two groups. It was interesting to note that over two-thirds of the respondents have not attended PME in residence and most PME experience was greater than three years old. Because of this the working environment group may not have the benefit of the good physical fitness habits taught at PME in residence. Therefore one might suggest that there is a pretty good assessment between PME and non-PME environment.

Table 4.5

PME (HOW LONG AGO)

PME	Frequency	Cum Freq	Percent	PME Percent
NO	190	190	66.434	0.000
< 1YR	17	207	5.944	100.000
1 - 2	6	213	2.098	
2 - 3	10	223	3.497	
3 - 4	12	235	4.196	
> 4YRs	51	286	17.832	

Survey Question 6 (Table 4.6). This is the last background question. Respondents estimated their current level of fitness. This estimate was based on Air Force standards presented to the service members. Physical fitness is part of the PME program and as one might expect the respondents viewed themselves in better physical condition than the ASD respondents. A rather significant number of the ASD respondents did not even know how to rate their overall physical condition. Again the ASD respondents showed a reluctance to answer the question. This made the comparison more difficult.

Table 4.6

LEVEL OF FITNESS

LEVEL	Frequency	Cum Freq	Percent	PME Percent
POOR	7	7	2.448	1.30
FAIR	49	56	17.133	15.10
GOOD	79	135	27.622	38.40
EXCELLENT	89	224	31.119	44.40
Don't Know	62	286	21.678	0.60

Summary From this section of the survey one can readily see that the two groups are similar enough to make valid comparisons. One area of concern was the high percentage of ASD respondents who chose not to answer certain questions. This was considered in the analysis and should not bias the results.

Personal Attitudes

Here survey respondents assessed their personal attitude on fitness. Attitudes on fitness as a lifestyle, the

perceived psychological benefits of fitness, the use of duty time, aerobics as part of the Air Force's fitness program, the importance of muscular strength, and weight control were surveyed. This area attempted to get some idea of what the respondents felt was important. A CHI-SQUARE test was used to compare the two groups to test the level of significance (at alpha = .05) of differences in various responses.

Survey Question 7 (Table 4.7). The first question dealt with the perceived importance of fitness as part of a healthy lifestyle. From the data one can see that people in both groups definitely agree with the importance of a healthy lifestyle. Nearly 95 percent of the PME respondents felt that fitness is an important part of a healthy life style versus 90 percent of the ASD group.

Table 4.7

FITNESS LIFESTYLE

LIFESTYLE	Frequency	Cum Freq	Percent	PME Percent
N.A.	8	8	2.797	0.2
S.DISAGREE	3	11	1.049	1.5
DISAGREE	2	13	0.699	1.5
NEITHER	14	27	4.895	2.3
AGREE	102	129	35.664	44.9
S.AGREE	157	286	54.895	49.6

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	12.97
P VALUE	0.0114
DEGREES OF FREEDOM	4

Since the P Value of 0.0114 is less than .05 we reject the null hypothesis and accept the alternate hypothesis. One can say there is a statistical difference between the two

populations. Both populations seemed to agree that fitness is an important part of a person's lifestyle, however by evaluating the individual cell Chi-Squares we can determine that the ASD group felt more strongly about it. The observed number of ASD respondents was larger than the expected for strongly agree.

Survey Question 8. Table 4.8 presented the perceived psychological benefits you get from aerobic exercise. Over 90 percent of both populations felt there are important psychological benefits.

Table 4.8

PERCEIVED PSYCHOLOGICAL BENEFITS

BENEFITS	Frequency	Cum Freq	Percent	PME Percent
N.A.	3	3	1.049	0.7
S.DISAGREE	4	7	1.399	1.4
DISAGREE	5	12	1.748	2.2
NEITHER	12	24	4.196	4.1
AGREE	101	125	35.315	43.3
S.AGREE	161	286	56.294	48.6

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	6.613
P VALUE	0.1578
DEGREES OF FREEDOM	4

Since the P Value of .1578 is greater than an alpha of .05 we do not reject the null hypothesis. One can say from this test that there is no significant difference in the responses of the two populations. Both groups of respondents agree there are important perceived psychological benefits of being physically fit.

Survey Question 9 (Table 4.9). Question number nine stressed the importance of the use of duty time for fitness programs.

Table 4.9

USE of DUTY TIME

DUTY TIME	Frequency	Cum Freq	Percent	PME Percent
N.A.	1	1	0.350	0.30
S.DISAGREE	10	11	3.497	3.10
DISAGREE	14	25	4.895	6.20
NEITHER	31	56	10.839	7.70
AGREE	98	154	34.266	38.90
S.AGREE	132	286	46.154	43.80

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	5.249
P VALUE	0.2627
DEGREES OF FREEDOM	4

Since the P Value of .2627 is greater than an alpha of .05, we fail to reject the null hypothesis. This states that the data do not suggest a difference between the two populations. The majority of both ASD and PME respondents felt the use of duty time for aerobic exercise would be beneficial. One typical ASD respondents said: "Time allotment for physical training should be a mandatory part of the normal duty week for all personnel (Appendix C #52).

Survey Question 10 (Table 4.10). This question asked the respondents whether they thought aerobic fitness should be part of the Air Force's fitness and health program.

Table 4.10

AEROBIC FITNESS AS PART OF THE AF PROGRAM

AEROBIC FIT	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	2	2	.699	1.7
DISAGREE	9	11	3.147	2.8
NEITHER	31	42	10.839	5.8
AGREE	112	154	39.161	49.8
S.AGREE	132	286	46.154	39.8

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	17.99
P VALUE	0.0012
DEGREES OF FREEDOM	4

Since the P Value of .0012 is less than an alpha of .05, we reject the null hypothesis and accept the alternate. There is a difference between the two populations. However, more ASD respondents than expected strongly agreed; at the same time, more than expected also had no opinion. Some of the ASD respondents suggested alternative means of fitness. "Additional tests of fitness such as bicycling and swimming should be available to substitute for running/walking " (Appendix C #12).

Survey Questions 11 and 12. These are the final two questions in this section. Table 4.11 presented the responses to attitudes on muscular strength and Table 4.12 on maintaining proper body weight.

Table 4.11

MUSCULAR STRENGTH AS PART OF THE FITNESS PROGRAM

STRENGTH	Frequency	Cum Freq	Percent	PME Percent
N.A.	1	1	0.350	0.0
S.DISAGREE	7	8	2.448	3.0
DISAGREE	44	52	15.385	14.5
NEITHER	89	141	31.119	21.8
AGREE	99	240	34.615	42.6
S.AGREE	46	286	16.084	18.1

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	13.14
P VALUE	0.0106
DEGREES OF FREEDOM	4

Since the P Value of .0106 is less than alpha of .05 reject the null hypotnesis and accept the alternate; there is a difference in group responses. People did not feel as strongly about these two aspects of fitness and health as they did about many of the others. The ASD group was more middle of the road on this question. They were less likely to agree with the importance of muscular strength. A typical response was; "I do not believe a muscular strength test should be administered" (Appendix C #25).

Table 4.12

WEIGHT CONTROL AS PART OF THE FITNESS PROGRAM

WEIGHT CTRL	Frequency	Cum Freq	Percent	PME Percent
N.A.	2	2	0.699	0.1
S.DISAGREE	5	7	1.748	2.2
DISAGREE	7	14	2.448	4.4
NEITHER	35	49	12.238	6.1
AGREE	123	172	43.007	49.3
S.AGREE	114	286	39.860	37.9

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	16.90
P VALUE	0.0020
DEGREES OF FREEDOM	4

Since the P Value of .0020 is less than an alpha of .05 reject the null hypothesis and accept the alternate. Again there is a difference between the populations and the ASD community is less likely to agree with the importance of weight control as is the training environment group.

Summary This section of the survey was an attempt to get peoples personal attitudes on fitness. People felt fitness was important. For some reason the ASD group tended to answer more on strongly agree and neither while the PME group was more evenly split between strongly agree and agree. The responses tend to suggest a more split opinion for the ASD group than the PME group. The ASD group felt more strongly about aerobic activities than muscular strength areas. The views on the current Air Force fitness program are next.

The Current Air Force Fitness Program

People have varying opinions on the current Air Force fitness program. Attitudes were examined on fitness as it related to peacetime and wartime missions, the administration of the current program, use of manpower, if the current program maintained fitness throughout the year, and the impact of unit commander support.

Survey Questions 13 and 14. The first two questions in this section asked the respondents to asses fitness as it relates to mission performance under peacetime (Table 4.13) and wartime (Table 4.14) conditions. Most of the respondents agreed that military members are fit enough to perform peacetime missions but question whether or not AF members are fit enough to go to war.

Table 4.13

PHYSICALLY FIT FOR PEACETIME MISSION?

PEACETIME	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	3	3	1.049	1.4
DISAGREE	24	27	8.392	10.0
NEITHER	27	54	9.441	10.1
AGREE	177	231	61.888	67.7
S.AGREE	47	278	16.434	10.7
??	8	286	2.798	0.1

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	8.624
P VALUE	0.0712
DEGREES OF FREEDOM	4

Since the P Value of .0712 is greater than an alpha of .05, we fail to reject the null hypothesis. There is no significant difference of opinion on whether or not Air Force personnel are fit enough to perform peace time mission.

Table 4.14

PHYSICALLY FIT FOR WARTIME MISSION?

WARTIME	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	31	31	10.839	11.9
DISAGREE	92	123	32.168	33.5
NEITHER	56	179	19.580	26.1
AGREE	68	147	23.776	25.1
S.AGREE	14	261	4.895	3.2
??	25	286	8.741	0.2

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	4.977
P VALUE	0.2897
DEGREES OF FREEDOM	4

Since the P Value of .2897 is greater than an alpha of .05, we fail to reject the null hypothesis. There is no major difference of opinion between the two groups on the war time fitness issue. One survey respondent said, "The public expects the military to be able to fight and win any war we engage in; currently our force would require drastic changes in order to accomplish this. The publics image of a lean and mean fighting machine is there" (Appendix C #15).

Survey Questions 15 (Table 4.15), 16 (Table 4.16), and 17 (Table 4.17). These three questions presented data on the administration of the current program.

Table 4.15

CURRENT PROGRAM IS ADMINISTERED FAIRLY

ADMIN FAIRLY	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	32	32	11.189	22.2
DISAGREE	41	73	14.336	32.3
NEITHER	52	125	18.182	17.5
AGREE	118	243	41.259	24.8
S.AGREE	15	258	5.245	3.0
??	28	286	9.790	0.2

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	68.13
P VALUE	0.0000
DEGREES OF FREEDOM	4

Since the P Value of 0.00 is less than an alpha of .05 reject the null hypothesis and accept the alternate. There is a difference between the two groups. The training group is more likely to disagree and say that the program is not fairly administered.

Table 4.16

IS THE CURRENT PROGRAM A GOOD TEST OF FITNESS?

TEST of FIT?	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	51	51	17.832	24.8
DISAGREE	111	162	38.811	40.0
NEITHER	51	213	17.832	13.9
AGREE	53	266	18.531	18.5
S.AGREE	8	274	2.797	2.5
??	12	286	3.497	0.3

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	7.230
P VALUE	0.1242
DEGREES OF FREEDOM	4

Since the P Value of .1242 is greater than alpha of .05 accept the null hypothesis. There is no significant

statistical difference between the ASD group and the PME group. Both groups feel the current program is inadequate. One survey respondent said: "I believe the fitness test as it stands today is of little value and should be removed or improved" (Appendix C #47). Someone else said: "We still have not got our act together on physical fitness. The basic problem is that everyone realizes that running a 1.5 mile run and meeting a weight standard once a year is a joke" (Appendix C #119).

Table 4.17

EASE OF ADMINISTRATION/USE OF MANPOWER

MANPOWER	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	3	3	1.049	2.7
DISAGREE	10	13	3.497	6.5
NEITHER	44	57	15.385	9.9
AGREE	176	233	61.538	68.0
S.AGREE	40	273	13.986	12.6
??	13	286	3.543	0.3

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	14.32
P VALUE	0.0064
DEGREES OF FREEDOM	4

Since the P Value of .0064 is less than alpha of .05 reject the null hypothesis and accept the alternate. There is a difference between the two groups on this question. Both groups appear to feel the program is easy to administer. The main difference appears to be with ASD members taking no position or less likely to agree.

Survey Question 18. Table 4.18 presents data on whether the current program adequately encourage individuals to maintain physical fitness throughout the year.

Table 4.18

DOES CURRENT PROGRAM MAINTAIN FITNESS THROUGHOUT THE YEAR?

THRUOUT YEAR?	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	118	118	41.259	50.5
DISAGREE	123	241	43.007	38.6
NEITHER	23	264	8.042	5.4
AGREE	15	279	5.245	4.1
S.AGREE	3	282	1.049	1.2
??	4	286	1.399	0.2

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	8.721
P VALUE	0.0685
DEGREES OF FREEDOM	4

Since the P Value of .0685 is greater than alpha of .05 accept the null hypothesis. There is no major statistical difference between the two groups. Over 80 percent of the respondents from both groups felt that the program as administered is inadequate. One military member said; "Most people either train for a few weeks prior to the test or else just go all out for one day, unless they are already serious about staying in shape" (Appendix C #83).

Survey Question 19. This is the last question in this section of the survey. Table 4.19 presented data on the importance of Unit Commander support. Aside from individual motivation, is the commanders support the most important aspect of a fitness program?

Table 4.19

UNIT COMMANDER'S SUPPORT

CMDR's SUPPORT	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	21	21	7.343	7.7
DISAGREE	45	66	15.734	21.7
NEITHER	72	138	25.175	16.4
AGREE	111	249	38.811	41.1
S.AGREE	30	279	10.490	13.0
??	7	286	1.748	0.1

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	15.70
P VALUE	0.0034
DEGREES OF FREEDOM	4

Since the P Value of .0034 is less than an alpha of .05 reject the null hypothesis and accept the alternate. There is a difference between the respondents. The ASD group was more undecided as to the importance of the Unit Commanders support and less likely to agree. However, one typical ASD respondent had this to say; "If physical fitness is to be an integral part of Air Force standards, then unit commanders must provide the use of duty time to encourage participation" (Appendix C #30).

Summary Information was collected about attitudes on the current Air Force fitness program. The Chi-Square test statistically compared the two samples. Most people from both groups felt we could perform the peacetime mission and were not really sure we could do our wartime mission. Over 50 percent of the ASD group and over 60 percent of the PME group felt the current test was not a good test of fitness, while over 80 percent of the ASD group and almost 90 percent of the

PME group felt that the current program does not maintain fitness throughout the year. The ASD sample once again had a higher tendency to be neutral than did the PME group. One must deal with possible changes to the Air Force fitness program to correct the perceived deficiencies.

Possible Changes to the Air Force Fitness Program

What are the future requirements for men and women? Do we need the frequency of the testing increased? What would be the affect of adding push-ups and sit-ups to the program.

Survey Questions 20 and 21. The first two questions in this section ask about future requirements for men (Table 4.20) and women (Table 4.21).

Table 4.20

FUTURE REQUIREMENTS FOR MEN

REQ's for MEN	Frequency	Cum Freq	Percent	PME Percent
EASIER	9	9	3.147	3.0
SAME	161	170	56.294	51.8
HARDER	75	245	26.224	37.9
NO OPINION	41	286	14.336	7.0

Table 4.21

FUTURE REQUIREMENTS FOR WOMEN

REQ's for WMN	Frequency	Cum Freq	Percent	PME Percent
EASIER	8	8	2.797	1.9
SAME	121	129	42.308	40.7
HARDER	84	213	29.371	42.9
NO OPINION	73	286	25.524	13.7

Nearly three fourths of the ASD respondents felt future requirements for both men and women should be the same or

more difficult. While only approximately three percent of the respondents felt the requirements should be relaxed.

Survey Question 22. Table 4.22 presents the data on the suggested timing of Air Force fitness testing.

Table 4.22

WHEN SHOULD TESTS BE ADMINISTERED?

HOW OFTEN?	Frequency	Cum Freq	Percent	PME Percent
3 MONTHS	87	87	30.420	47.6
6 MONTHS	90	177	31.469	29.5
12 MONTHS	66	243	23.077	14.4
NEVER	21	264	7.343	5.6
NO OPINION	22	286	6.294	2.5

Sixty percent of the ASD respondents feel that the testing should be done two to four times per year rather than only once per year. The PME respondents felt testing should be four times per year. While very few of the respondents felt testing should be done only once per year. One individual said; "The run/walk test should be given every 3 - 6 months to avoid the problem of people disregarding fitness over the winter months" (Appendix C #3).

Survey Questions 23 and 24. These two questions delt with lost duty time due to testing every six months (Table 4.23) and testing every three months (Table 4.24) vice every twelve months.

Table 4.23

TESTING EVERY SIX MONTHS CAUSES EXCESS LOST DUTY TIME

SIX MONTHS	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	84	84	29.371	31.2
DISAGREE	122	206	42.657	47.8
NEITHER	42	248	14.685	9.7
AGREE	23	271	8.042	8.1
S.AGREE	7	278	2.448	3.0
??	8	286	1.399	0.2

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	7.336
P VALUE	0.1192
DEGREES OF FREEDOM	4

Since the P Value of .1192 is greater than an alpha of .05, fail to reject the null hypothesis. There is no difference between the two groups on testing every six months. Both groups feel that it does not impact duty time that much. Respondents really do not feel that testing twice a year will increase lost duty time.

Table 4.24

TESTING EVERY THREE MONTHS CAUSES EXCESS LOST DUTY TIME

THREE MONTHS	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	61	61	21.329	22.9
DISAGREE	84	145	29.371	35.5
NEITHER	54	199	18.881	14.3
AGREE	52	251	18.182	18.4
S.AGREE	31	282	10.839	8.6
??	4	286	1.399	0.3

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	7.297
P VALUE	0.1210
DEGREES OF FREEDOM	4

Since the P Value of .1210 is greater than an alpha of .05 accept the null hypothesis. There is no statistical difference between the two groups. A little over a fourth of the both groups indicated quarterly testing could result in lost time. The remainder had no opinion or disagreed completely.

Survey Questions 25 (Table 4.25), 26 (Table 4.26), 27 (Table 4.27) and 28 (Table 4.28). The next six questions relate to adding push-ups and sit-ups for both men and women to the physical fitness program. The respondents were not as specific on this issue. The responses were more spread out across the spectrum. The respondents did not converge on specific responses as in previous questions, although there was a slight tendency to favor the addition of push-ups and sit-ups for both men and women.

Table 4.25

ADD PUSH-UPS FOR MEN

P-U's MEN	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	28	28	9.790	13.7
DISAGREE	70	98	24.476	18.8
NEITHER	53	151	18.531	11.9
AGREE	99	250	34.615	41.1
S.AGREE	33	283	11.538	14.3
??	3	286	1.049	0.2

Table 4.26

ADD PUSH-UPS FOR WOMEN

P-U's WOMEN	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	34	34	11.888	13.8
DISAGREE	69	103	24.126	20.4
NEITHER	47	150	16.434	16.0
AGREE	94	244	32.867	37.1
S.AGREE	26	270	9.091	12.5
??	16	286	5.594	0.2

Table 4.27

ADD SIT-UPS FOR MEN

S-U's MEN	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	33	33	11.538	11.7
DISAGREE	58	91	20.280	16.8
NEITHER	47	138	16.434	10.8
AGREE	108	246	37.762	44.6
S.AGREE	36	282	12.587	16.0
??	4	286	1.399	0.1

Table 4.28

ADD SIT-UPS FOR WOMEN

S-U's WOMEN	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	33	33	11.538	11.3
DISAGREE	57	90	19.930	16.5
NEITHER	44	134	15.385	13.8
AGREE	106	240	37.063	43.2
S.AGREE	32	272	11.189	15.0
??	14	286	4.895	0.2

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

		MEN	WOMEN
Push-ups	OVERALL CHI SQUARE	18.25	5.195
	P VALUE	0.0011	0.2678
	DEGREES OF FREEDOM	4	4
Sit-ups	OVERALL CHI SQUARE	12.22	6.120
	P VALUE	0.0158	0.1904
	DEGREES OF FREEDOM	4	4

The data above showed the chi-square numbers for the two groups. In the case of adding push-ups and sit-ups for both men and women; one can see that there is a difference between men and women in the two groups of respondents. In both cases one would reject the null hypothesis for men and fail to reject the null hypothesis for women. There is a statistical difference in the responses involving push-ups or sit-ups for men but not so for women. ASD personnel tended to be more neutral or even slightly negative concerning adding push-ups or sit-ups for men.

Survey Questions 29 and 30. These two questions asked whether or not the respondents felt adding push-ups (Table 4.29) and sit-ups (Table 4.30) would cause serious loss of duty problems at the unit level.

Table 4.29

ADDING PUSH-UPS WILL CAUSE PROBLEMS

DUTY TIME	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	73	73	25.524	25.6
DISAGREE	129	202	45.105	46.4
NEITHER	54	256	18.881	16.2
AGREE	9	265	3.147	8.1
S.AGREE	10	275	3.497	3.4
??	11	286	3.846	0.3

Table 4.30

ADDING SIT-UPS WILL CAUSE PROBLEMS

DUTY TIME	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	73	73	25.524	26.4
DISAGREE	127	200	44.406	46.2
NEITHER	56	256	19.580	15.9
AGREE	8	264	2.797	7.7
S.AGREE	11	275	3.846	3.6
??	11	286	3.846	0.2

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

Lost Duty Time Due To:	Push-ups	Sit-ups
OVERALL CHI SQUARE	8.859	10.28
P VALUE	0.0647	0.0360
DEGREES OF FREEDOM	4	4

According to the test one would fail to reject the null hypothesis for push-ups and reject the null hypothesis for sit-ups. This means that there is no significant difference of opinion for additional duty time for adding push-ups, but and there is for adding sit-ups. both groups generally indicated neither push-ups nor sit-ups would be practical. A significant number of ASD respondents (23.5%) had no opinion or choose not to answer the question concerning the impact sit-ups would have.

Survey Questions 31 (Table 4.31) and 32 (Table 4.32). The next two questions deal with mandatory reporting of fitness results on OPRs and APRs. Most respondents agree that this would not improve overall fitness and would de-motivate personnel.

Table 4.31

MANDATORY REPORTING WOULD IMPROVE FITNESS

MANDATORY RPT	Frequency	Cum Freq	Percent	PME Percent
S.DISAGREE	114	114	39.860	37.3
DISAGREE	73	187	25.524	21.7
NEITHER	26	213	9.091	10.1
AGREE	40	253	13.986	20.9
S.AGREE	26	279	9.091	9.7
??	7	286	1.748	0.3

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	7.918
P VALUE	0.0946
DEGREES OF FREEDOM	4

Since the P Value of .0946 is greater than an alpha of .05 we fail to reject the null hypothesis. There is no significant difference between the two groups of respondents. The respondents from both populations agree that mandatory reporting of fitness would not be an effective way of improving fitness levels. One respondent said; "Mandatory reporting would allow the fit to get fitter and the borderline individual to get discouraged because of his fitness even though he/she may be a top notch individual" (Appendix C #85).

Table 4.32

MANDATORY REPORTING WOULD DE-MOTIVATE

DE-MOTIVATE	Frequency	Cum Freq	Percent	Cum Percent
S.DISAGREE	23	23	8.042	N.A.
DISAGREE	54	77	18.881	
NEITHER	48	125	16.783	
AGREE	65	190	22.727	
S.AGREE	81	271	28.322	
??	15	286	4.545	

From the percentages one can see just over one-half of the ASD respondents feel it would be a de-motivator while one-fourth of the respondents did not think it would be a de-motivator.

Summary This section of the survey looked at possible changes to the current Air Force fitness program. The survey respondents were more split on these questions. The ASD group would be less likely to support quarterly testing and the addition of strength testing than would the PME group. Neither group thought mandatory reporting of fitness on OPR's and APR's would be very effective. There are actions a unit commander could take to help eleviate the problem.

Effectiveness of Actions Unit Commander Might Take

Unit commanders might be able to improve the fitness of his people by taking some key steps. Some options to consider could be reasonable use of duty time, use of rewards and recognition, and voluntary and mandatory unit workouts.

Survey Question 33. From Table 4.33 one can see that almost ninety percent of the respondents felt that reasonable use of duty time would improve fitness levels.

Table 4.33

REASONABLE USE OF DUTY TIME

USE of DUTY	Frequency	Cum Freq	Percent	PME Percent
V.INNEFFECT	3	3	1.049	3.4
INNEFFECTIVE	12	15	4.196	7.7
NEITHER	13	28	4.545	6.5
EFFECTIVE	129	157	45.105	49.7
V.EFFECTIVE	119	276	41.608	32.3
??	10	236	3.497	0.4

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	16.92
P VALUE	0.0020
DEGREES OF FREEDOM	4

Since the P Value of .0020 is less than an alpha of .05, we reject the null hypothesis and accept the alternate hypothesis. There is a statistical difference between the groups. The ASD group of respondents felt it would be more effective than did the PME group.

Survey question 34. There was mixed response to the use of rewards. From Table 4.34 the respondents questioned the effectiveness of this approach.

Table 4.34

USE OF REWARDS AND RECOGNITION

RECOGNITION	Frequency	Cum Freq	Percent	PME Percent
V.INNEFFECT	17	17	5.944	6.5
INNEFFECTIVE	36	53	12.587	19.6
NEITHER	65	118	22.727	17.0
EFFECTIVE	103	221	36.014	40.7
V.EFFECTIVE	54	275	18.881	15.7
??	11	286	3.846	0.5

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

OVERALL CHI SQUARE	13.25
P VALUE	0.0101
DEGREES OF FREEDOM	4

Since the P Value of .0101 is less than an alpha of .05 reject the null hypothesis and accept the alternate. There is a difference between the two groups on the use of rewards to improve fitness. The ASD respondents are more likely to respond to the use of rewards as a means to improving fitness.

Survey Questions 35 and 36. The final two objective questions on the survey look at unit workouts. The respondents had mixed feelings to these questions. They supported the voluntary program (Table 4.35) more than the mandatory program (Table 4.36).

Table 4.35

REGULAR VOLUNTARY UNIT WORKOUTS

VOLUNTARY	Frequency	Cum Freq	Percent	PME Percent
V.INNEFFECT	14	14	4.895	8.3
INNEFFECTIVE	48	62	16.783	24.5
NEITHER	46	108	16.084	13.8
EFFECTIVE	114	222	39.860	42.5
V.EFFECTIVE	54	276	18.881	10.2
??	10	286	3.496	0.7

Table 4.36

REGULAR MANDATORY UNIT WORKOUTS

MANDATORY	Frequency	Cum Freq	Percent	PME Percent
V.INNEFFECT	40	40	13.986	13.0
INNEFFECTIVE	83	123	29.021	20.8
NEITHER	36	159	12.587	15.7
EFFECTIVE	63	222	22.028	30.0
V.EFFECTIVE	50	272	17.483	19.2
??	14	286	4.895	0.3

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

		Voluntary	Mandatory
Unit Workouts	OVERALL CHI SQUARE	25.82	14.17
	P VALUE	0.0000	0.0068
	DEGREES OF FREEDOM	4	4

In both cases the P Value is less than an alpha of .05 so reject the null hypothesis and accept the alternate. There is a difference between the two groups of respondents. In regard to the voluntary workouts the ASD group is more

inclined think they would work. Both groups would be less inclined to support mandatory workouts with the ASD group even more against them.

The unit commander has certain options he can exercise if he desires. One of the most important was the use of duty time. The respondents felt that this is key to a viable program. The analysis of the findings is presented next.

Analysis of the Findings

The above tables represent the sample populations responses to the 36 objective Physical Fitness questions. These responses were compared against responses from respondents given this same survey from a different environment. From both populations one can see that the respondents believe that fitness and health are important.

Investigative Question 1. The first investigative question asked: How do the attitudes of Air Force members in the Acquisition career field compare to Air Force members in a training environment (PME in residence)? The survey consisted of four main areas. The first two of those areas related specifically to investigative question number one and the other two ares related to investigative question number two. Each investigative area brings out the similarities and differences between the two groups.

The first major area examined personal attitudes on health and fitness. Over 90 percent of respondents from both groups felt that fitness is and should be an important part of the Air Force lifestyle. The data showed that both groups

of respondents had strong opinions about fitness. One of the key observations is on the use of duty time; over 80 percent of the respondents felt reasonable use of duty time would increase fitness levels. Respondents also felt aerobic exercise should be pursued since almost 90 percent of both groups either agreed or strongly agreed. Whereas, only 50 percent and 60 percent thought muscular was important for the ASD and PME groups respectively.

ASD tended to feel more strongly in most areas, but also had a significant number of people respond with no opinion. The PME respondents seemed split around agree and strongly agree and relatively few had no opinion. As mentioned previously, this may suggest a more polar group of people for the working environment. They had people with very strong opinions and people who could not make up their minds about the importance of fitness.

The second major area was devoted to the current Air Force fitness program. Survey respondents tended to agree that the current program is lacking proper attention and direction. The differences were more along the lines of degree. A majority of the survey respondents did not believe the Air Force has a viable physical fitness program. It did not matter which group they came from because the answers were very similar. Nearly 80 percent of the survey respondents from both groups were certain we could do our jobs in peacetime and were uncertain (approximately 27 percent) as to whether or not we could handle a wartime

environment. Almost 90% of the PME respondents felt the current program did not maintain fitness throughout the year as compared to 84% of the ASD respondents. Almost half of the respondents thought that the unit commander's support was essential to a successful fitness program, while over one fourth of the ASD respondents had no opinion. This pattern of no opinion seemed to repeat itself throughout the analysis.

Investigative Question 2. The second investigative question encompasses the final two categories of the survey. The question asks: What are Air Force members suggestions for improving the existing Air Force fitness and weight control program? Here the emphasis was on possible changes to the Air Force fitness program.

Over 98% of the survey respondents from both groups felt the Air Force fitness program should not be made any easier. While nearly twice as many PME respondents felt it should be made more difficult as did the ASD respondents. At the same time over 70 percent of the respondents felt that the frequency of the testing needs to be increased. The people in the training environment supported testing at increased frequencies than did the working environment. The respondents were not really sure adding push-ups and sit-ups would help. The PME group supported it more than the ASD group did. Both groups were opposed to mandatory reporting of fitness scores on OPR's and APR's. They felt this would

only demotivate personnel and not serve a beneficial purpose.

The respondents agreed that changes needed to be made and indicated they would support testing more than once per year. The respondent did not necessarily think push-ups and sit-ups would be a welcome addition to the Air Force fitness test. The respondents in the training environment indicated a higher willingness than did the working environment.

The final category of questions was devoted to actions a unit commander might take to improve fitness in the unit. The responses were quite different for what a unit commander might do. The ASD respondents were much more positive on the effects of the use of duty time to improve fitness. Over 86 percent of the ASD respondents believed it would be a very effective way to improve fitness, whereas just over 80 percent of the PME respondents felt it would be effective. On the other hand, they did not really think rewards or recognition would be as effective; as just over 50 percent of the respondents thought it would work effectively. As far as unit workouts go, the respondents were split. They felt more strongly that the voluntary workouts would be more effective than the mandatory workouts.

The differences in this area indicated the training group perceived fitness should be more up to the individual and not up to the unit commander to make a significant difference. If one is willing to work out on their own then it should not make any difference if work time is authorized. The results

were similar on the use of rewards. Fitness should be internalized and it should not make any difference if rewards are offered. The PME group was more consistent on the answers it give between voluntary and mandatory participation in unit workouts, while the ASD group was far more against the mandatory unit workout program and thought the voluntary program might work.

Chapter Summary

This chapter presented the findings of the survey given to Air Force members assigned to Aeronautical Systems Division Wright Patterson AFB, Ohio. The results varied, but an underlying theme surfaced on the polarity of the ASD group. This group tended have strong opinions in areas and at the same time had a rather significant number of people have no opinion as compared to the PME environment. The analysis presented rather similar overall results on the perceived importance of fitness and also indicated a reluctance of people to do anything to improve their overall health and fitness. Chapter V presents the conclusions and recommendations.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Chapter Overview

This final chapter makes the conclusions and recommendations on the findings of the physical fitness survey given to military members assigned to Aeronautical Systems Division. The results of the specific survey questions are used to compare against military members who were attending Professional Military Education in residence. Specific conclusions will be given along with recommendations for improvement and suggestions for further research.

Conclusions

One might expect that individuals in a training environment would hold physical fitness in a higher light. Even though there are statistical differences in the respondents answers, the overall judgement is both groups felt fitness is important. The respondents felt the Air Force's current program of a mile and a half run does not constitute an adequate physical fitness program.

The objective of this report was to see if there were any differences between the two different populations. The previous chapter presented the data for this study. The conclusions are based on an analysis of those results and the conclusions drawn from the two research questions and sub-

divided into the four major research sections of the survey.

Research Question 1

1) How do the attitudes of Air Force members in the Acquisition Management career field compare to attitudes of Air Force members in a training environment (PME in residence)?

Personal Attitude. It was evident Air Force individuals perceive the importance of a healthy lifestyle. They also understand there are important physiological benefits from being fit. Air Force members believe the use of duty time would help in maintaining a proper wellness program. The use of duty time has to specified so individuals do not feel that they are doing something that is against policy. For no matter what the Air Force does certain people are going to workout and keep fit, while certain other people will not do anything. The Air Force should tailor it's physical fitness program to try and reach a majority of the people. It should target it's approach to try and bring those individuals who are not interested in physical fitness into the main stream.

There is no doubt most Air Force members support personal physical fitness and health programs. However, some members felt Air Force management does not support the fitness program. Many survey respondents commented on the lack of unit commander support. People felt they were looked at negatively for using duty time for workouts. That is unfortunate because these are the people we want to try and

reach. These are the individuals who will not work out on their own time.

The Current Air Force Fitness Program. A majority of the survey respondents are not satisfied with the current Air Force physical fitness program. It did not matter which group they came from because the answers were very similar. The survey respondents were certain we could do our jobs in peacetime but were uncertain as to whether or not we could handle a wartime environment. The military is losing almost all of it's war fighting experience. What do we know about fighting a war? It has been approximately 20 years since we have been to war. We are losing touch with the reality of what are profession may call us to do. We really do not have any idea of what it would be like to endure the physical and psychological trauma of a wartime environment.

The current program does not maintain fitness throughout the year. This was one reason most of the respondents felt change was needed. The current program as administered does not develop and maintain healthy and fit Air Force members. Both groups of respondents agree on this point and only differ on the degree of the support.

Research Question 2

> 2) What are Air Force members suggestions for improving the existing Air Force fitness and weight control program?

Possible Changes to the Air Force Fitness Program. There is no doubt that reform is required in the Air Force physical fitnes program. The fitness program should not be

made any easier and the frequency of the testing needs to be increased. Testing once per year does not require the military member to maintain fitness throughout the year. Once again we come back to the issue of duty time for workouts. If the Air Force is going to reach the polar group of individuals who can not make up their minds about the importance of fitness, then they are going to have to encourage members to workout. If military members get started on a program they are going to be more willing to use their own time when duty time is not available. The issue here is not one of muscular strength, but of aerobic conditioning. Therefore, the addition of push-ups and sit-ups may not be the answer. The current program should be revamped to allow people to earn aerobic points doing something they enjoy.

Effectiveness of Actions Unit Commander Might Take. The unit commander is going to have to be involved if any change to the program is going to work. The unit commander must make work time available and encourage his people to use it. People would support voluntary workout programs and would have to support mandatory workouts. People may not like this solution the best, but it may be a way to start getting people involved. To get [illegible]volvement up, a highly encouraged program like the program at Squadron Officer School may be the answer to help get people started. Once the foot is in the door it can be kept open with minimal effort.

We saw that the people in the training environment supported fitness and seemed to internalize the benefits more than the people in a working environment. The ASD group in every area of the survey was less sure of themselves (based on the number of questions left unanswered or answered no comment/undecided). The survey respondents in the training environment seemed to voice their opinion and did not chose the no opinion answer very often. The people in the PME group would be more likely to support major fitness reform in the Air Force.

Recommendations

The first and probably most important recommendation is to educate people on the importance of physical fitness. The Air Force makes people attend briefings of all sorts (Fraud Waste & Abuse, Sexual Harassment, local area driving, etc). It would not be difficult to make an annual physical fitness briefing for military members. Even more integral is the education supervisors need so they can stress the importance of fitness to their workers.

Many of the survey respondents alluded to the duty time people are supposedly allowed to use for fitness. Enforcing this policy and letting people know the requirements might be one way to increase physical fitness. Some of the survey respondents said that they were looked at negatively for using duty time to try and maintain fitness levels. Supervisors must support the program if it is going to work.

They must encourage their people to take charge of their individual health.

Looking at alternative ways of keeping people physically fit is another way to increase or improve physical fitness. Some people would rather ride a bike or swim or even play a sport. Allowing people to earn aerobic points each week for activities they personally enjoy would increase fitness in Air Force members. Taking this one step further, you could develop swimming or biking tests for individuals to substitute for the run test.

Facilities also seem to be a major concern. One survey respondent suggested that larger offices have their own facilities. This would be a logical idea. It would cut down on the time required to go to and from the facilities. In the short run it would be a more costly program but in the long run it would allow more people the opportunity to partake in fitness programs.

The program of running a mile and a half once per year is not enough. The program should be changed to at least a three mile run (or 5 mile walk) administered no less than twice per year.

The bottom line is the current program is not sufficient to maintain adequate levels of fitness. The program has to be revamped and modified to meet the requirements of the Air Force and needs of the individual military member.

Limitations and Recommendations for Further Research

This research effort was generalized to one specific group in the Air Force. The extent of the research limited the researcher to a survey of self reported data. Two specific groups have been polled. The PME group provided data on cross section of Air Force people in a training environment. The ASD group provided data on Air Force people in a relatively sedentary working environment. There are many opportunities available to improve the existing fitness program. More research is needed to develop a physical fitness program that will meet the requirements of the Air Force and the individual needs of the members.

The same survey could also be given to operational units. Operational units have more physically demanding requirements as part of their jobs. You would think that they would perceive fitness to be at least as important as the PME environment.

A direct fall out of this research would be to poll unit commanders on what they think about fitness. Then you could poll the people who work in the unit to see if the workers echo the commanders thoughts. Military members think the use of duty time is very beneficial and would be a must to draw the outlyers into the program.

Another area that could be examined is the perception the general public has about the military. Do they feel the United States Armed Forces are physically fit enough to go to and sustain themselves in a war? How do the people feel

about the military members who wear the uniform for this nation? Do military members project a good image to the rest of the world?

Another possible area would be to examine how civilian employees feel about physical fitness. Do they have the same concerns that the military have? Do they perceive themselves as fit enough people to do what is required of them? And do they think it is the government's responsibility to provide facilities and time for their benefit?

One other area that could be examined is the idea of an alternate fitness program. Find out from military (and civilian) members what they feel would be a realistic fitness program that could be instituted in the Air Force. For no matter what is done it has to be an improvement to todays' inadequate Air Force Physical Fitness and health program.

Appendix A.

Physical Fitness and Health Survey

I. BACKGROUND INFORMATION

1. What is your current grade?

   a. E-1 - E-3 b. E-4 - E-6 c. E-7 - E-9 d. O-1 - O-3
   e O-4 - O-6

2. What is your sex?

   a. Male b. Female

3. What is your age?

   a. Under 30 b. 30-39 c. 40-49 d. 50 or older

4. What was your average number of aerobic training sessions per week in the last year? (An aerobic session is defined as one where the heart rate is raised to 75-85% of maximum for at least 20 minutes.)

   a. Less than 1 b. 1-2 c. 3-4 d. 5-6 e. 7 or more

5. What is your current (or estimated) fitness level, based upon the 1.5-mile run standards in the table?

a. Poor or Very Poor b. Fair c. Good d. Excell or Super e.Don't know

1.5-MILE RUN TIME IN MINUTES

(The Aerobics Program for Total Well-Being by Dr. Kenneth Cooper)

FITNESS CATEGORY		AGE 20-29	AGE 30-39	AGE 40-49	AGE 50-59
Very Poor	(men)	> 16:01	> 16:31	> 17:31	> 19:01
	(women)	> 19:01	> 19:31	> 20:01	> 20:31
Poor	(men)	14:01-16:00	14:44-16:30	15:36-17:30	17:01-19:00
	(women)	18:31-19:00	19:01-19:30	19:31-20:00	20:01-20:30
Fair	(men)	12:01-14:00	12:31-14:45	13:01-15:35	14:31-17:00
	(women)	15:55-18:30	16:31-19:00	17:31-19:30	19:01-20:00
Good	(men)	10:46-12:00	11:01-12:30	11:31-13:00	12:31-14:30
	(women)	13:31-15:54	14:31-16:30	15:56-17:30	16:31-19:00
Excell	(men)	9:45-10:45	10:00-11:00	10:30-11:30	11:00-12:30
	(women)	12:30-13:30	13:00-14:30	13:45-15:55	14:30-16:30
Super	(men)	< 9:45	< 10:00	< 10:30	< 11:00
	(women)	< 12:30	< 13:00	< 13:45	< 14:30

6. Have you attended any Professional Military Education (PME) in residence? If yes, how long ago?

a. 1 year or less b. 1 yr -2yrs c. 2 yrs - 3 yrs
d. 3 yrs - 4 yrs e. 4 yrs or more f. No

II. PERSONAL ATTITUDE

Please use one of the following responses to indicate your agreement/disagreement with items 7-12:

a. Strongly disagree b. Disagree c. Neither Agree nor Disagree
d. Agree e. Strongly Agree

7. Physical fitness should be an important part of a person's lifestyle.

8. Physical fitness has significant psychological benefits, such as an improved attitude, better self-image, increased self-confidence, etc.

9. Duty time devoted to physical training is an efficient use of time because it results in increased productivity on the Air Force job.

10. Aerobic fitness should be an important part of the Air Force Fitness Program.

11. Strength (muscular endurance) should be an important part of the Air Force Fitness Program.

12. Maintaining proper body weight should be an important part of the Air Force Fitness Program.

III. THE CURRENT AIR FORCE FITNESS PROGRAM

Please use one of the following responses to indicate your agreement/disagreement with items 13-19:

a. Strongly disagree b. Disagree c. Neither Agree nor Disagree
d. Agree e. Strongly agree f. Don't Know

13. In general, Air Force personnel are physically fit enough to perform their missions under peacetime.

14. In general, Air Force personnel are physically fit enough to perform their missions under wartime conditions (for example wearing CBW protective gear, etc.).

15. The current program (annual run/walk tests) is fairly and fully administered throughout the Air Force.

16. When properly administered, the current program adequately tests aerobic fitness.

17. The current test program is easy to administer, with minimum impacts on duty time and manpower.

18. The current program adequately encourages individuals to maintain physical fitness throughout the year.

19. Aside from individual motivation, the most important factor for success in the current program is the unit commander's support (enthusiasm, personal example, etc.)

IV. POSSIBLE CHANGES TO THE AIR FORCE FITNESS PROGRAM

20. Compared with the current requirements, future aerobic fitness standards (required times for the 1.5-mile run or 3-mile walk) for men should be.

a. easier b. the same c. harder d. no opinion

21. Compared with the current requirements, future aerobic fitness standards (required times for the 1.5-mile run or 3-mile walk) for women should be:

a. easier b. the same c. harder d. no opinion

22. Physical fitness tests should be administered:

a. every 3 months b. every 6 months c. every 12 months d. never e. no opinion

Please use one of the following responses to indicate your agreement/disagreement with items 23 - 32:

a. Strongly Disagree b. Disagree c. Neither Agree nor Disagree d. Agree e. Strongly Agree f. Don't Know

23. Testing every 6 months (vice 12 months) would cause serious problems at the unit level due to lost duty time.

24. Testing every 3 months (vice 12 months) would cause serious problems at the unit level due to lost duty time.

25. Push-ups should be added to the fitness test for men.

26. Push-ups should be added to the fitness test for women.

27. Sit-ups should be added to the fitness tests for men.

28. Sit-ups should be added to the fitness tests for women.

29. Adding push-ups (one-minute time limit) to the test program would cause serious problems at the unit level due to lost duty time.

30. Adding sit-ups (one-minute time limit) to the test program would cause serious problems at the unit level due to lost duty time.

31. Mandatory reporting of fitness test results on OPRs and APRs would be a practical and effective way to improve fitness.

32. Mandatory reporting of fitness test results on OPRs and APRs would demotivate personnel.

For items 33-36, please use one of the following responses to indicate your opinion of the effectiveness of the actions a unit commander might use to improve fitness in his/her unit.

a. Very Ineffective b. Ineffective c. Neither Effective
d. Effective e. Very Effective f. Don't Know nor Ineffective

33. Encourage reasonable use of duty time (about 2.5 hours per week) for physical training.

34. Rewards (e.g. day off, recognition at Commander's Call ,etc.) for superior performance and/or significant improvement from test to test (e.g., reducing run time by one minute).

35. Regularly scheduled unit workouts with voluntary participation.

36. Regularly scheduled unit workouts with mandatory participation.

ADDITIONAL COMMENTS

37. Please enter any other comments or suggestions on changes to the Air Force Fitness Program on the back of your answer sheet. (If your comment concerns a specific item on this questionnaire, please include the item number in your comment.)

THANKS AGAIN FOR YOUR PARTICIPATION!

Appendix B:

Chi-Square test results

Question 7 - Fitness as part of your lifestyle

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q7A	Q7B	ROW TOTALS
1	OBSERVED	19	3	22
	EXPECTED	18.00	4.00	
	CELL CHI SQ	0.06	0.25	
2	OBSERVED	19	2	21
	EXPECTED	17.18	3.82	
	CELL CHI SQ	0.19	0.87	
3	OBSERVED	29	14	43
	EXPECTED	35.18	7.82	
	CELL CHI SQ	1.08	4.88	
4	OBSERVED	562	102	664
	EXPECTED	543.19	120.81	
	CELL CHI SQ	0.65	2.93	
5	OBSERVED	621	157	778
	EXPECTED	636.45	141.55	
	CELL CHI SQ	0.38	1.69	
COLUMN TOTALS		1250	278	1528

OVERALL CHI SQUARE 12.97
P VALUE 0.0114
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 8 - Perceived psychological benefits of fitness

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q8A	Q8B	ROW TOTALS
1	OBSERVED	18	4	22
	EXPECTED	17.93	4.07	
	CELL CHI SQ	0.00	0.00	
2	OBSERVED	28	5	33
	EXPECTED	26.90	6.10	
	CELL CHI SQ	0.05	0.20	
3	OBSERVED	51	12	63
	EXPECTED	51.35	11.65	
	CELL CHI SQ	0.00	0.01	
4	OBSERVED	542	101	643
	EXPECTED	524.07	118.93	
	CELL CHI SQ	0.61	2.70	
5	OBSERVED	608	161	769
	EXPECTED	626.76	142.24	
	CELL CHI SQ	0.56	2.47	
COLUMN TOTALS		1247	283	1530

OVERALL CHI SQUARE 6.613
P VALUE 0.1578
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 9 - Use of duty time for fitness

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q9A	Q9B	ROW TOTALS
1	OBSERVED	39	10	49
	EXPECTED	39.89	9.11	
	CELL CHI SQ	0.02	0.09	
2	OBSERVED	78	14	92
	EXPECTED	74.90	17.10	
	CELL CHI SQ	0.13	0.56	
3	OBSERVED	96	31	127
	EXPECTED	103.39	23.61	
	CELL CHI SQ	0.53	2.31	
4	OBSERVED	487	98	585
	EXPECTED	476.24	108.76	
	CELL CHI SQ	0.24	1.06	
5	OBSERVED	548	132	680
	EXPECTED	553.58	126.42	
	CELL CHI SQ	0.06	0.25	
COLUMN TOTALS		1248	285	1533

OVERALL CHI SQUARE 5.249
P VALUE 0.2627
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 10 - Aerobic fitness as part of the Air Force fitness program.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q10A	Q10B	ROW TOTALS
1	OBSERVED	21	2	23
	EXPECTED	18.72	4.28	
	CELL CHI SQ	0.28	1.22	
2	OBSERVED	35	9	44
	EXPECTED	35.81	8.19	
	CELL CHI SQ	0.02	0.08	
3	OBSERVED	73	31	104
	EXPECTED	84.64	19.36	
	CELL CHI SQ	1.60	6.99	
4	OBSERVED	623	112	735
	EXPECTED	598.14	136.86	
	CELL CHI SQ	1.03	4.51	
5	OBSERVED	498	132	630
	EXPECTED	512.70	117.30	
	CELL CHI SQ	0.42	1.84	
COLUMN TOTALS		1250	286	1536

OVERALL CHI SQUARE 17.99
P VALUE 0.0012
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 11 - The importance of muscular strength.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q11A	Q11B	ROW TOTALS
1	OBSERVED	38	7	45
	EXPECTED	36.66	8.34	
	CELL CHI SQ	0.05	0.21	
2	OBSERVED	182	44	226
	EXPECTED	184.12	41.88	
	CELL CHI SQ	0.02	0.11	
3	OBSERVED	273	89	362
	EXPECTED	294.92	67.08	
	CELL CHI SQ	1.63	7.16	
4	OBSERVED	533	99	632
	EXPECTED	514.89	117.11	
	CELL CHI SQ	0.64	2.80	
5	OBSERVED	227	46	273
	EXPECTED	222.41	50.59	
	CELL CHI SQ	0.09	0.42	
COLUMN TOTALS		1253	285	1538

OVERALL CHI SQUARE 13.14
P VALUE 0.0106
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 12 - The importance of weight control.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q12A	Q12B	ROW TOTALS
1	OBSERVED	28	5	33
	EXPECTED	26.89	6.11	
	CELL CHI SQ	0.05	0.20	
2	OBSERVED	55	7	62
	EXPECTED	50.53	11.47	
	CELL CHI SQ	0.40	1.74	
3	OBSERVED	76	35	111
	EXPECTED	90.46	20.54	
	CELL CHI SQ	2.31	10.19	
4	OBSERVED	617	123	740
	EXPECTED	603.09	136.91	
	CELL CHI SQ	0.32	1.41	
5	OBSERVED	475	114	589
	EXPECTED	480.03	108.97	
	CELL CHI SQ	0.05	0.23	
COLUMN TOTALS		1251	284	1535

OVERALL CHI SQUARE 16.90
P VALUE 0.0020
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 13 - Are we physically fit for peacetime?

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q13A	Q13B	ROW TOTALS
1	OBSERVED	18	3	21
	EXPECTED	17.18	3.82	
	CELL CHI SQ	0.04	0.18	
2	OBSERVED	125	24	149
	EXPECTED	121.91	27.09	
	CELL CHI SQ	0.08	0.35	
3	OBSERVED	126	27	153
	EXPECTED	125.18	27.82	
	CELL CHI SQ	0.01	0.02	
4	OBSERVED	848	177	1025
	EXPECTED	838.64	186.36	
	CELL CHI SQ	0.10	0.47	
5	OBSERVED	134	47	181
	EXPECTED	148.09	32.91	
	CELL CHI SQ	1.34	6.03	
COLUMN TOTALS		1251	278	1529

OVERALL CHI SQUARE 8.624
P VALUE 0.0712
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 14 - Are we physically fit for wartime?

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q14A	Q14B	ROW TOTALS
1	OBSERVED	149	31	180
	EXPECTED	148.89	31.11	
	CELL CHI SQ	0.00	0.00	
2	OBSERVED	419	92	511
	EXPECTED	422.67	88.33	
	CELL CHI SQ	0.03	0.15	
3	OBSERVED	327	56	383
	EXPECTED	316.80	66.20	
	CELL CHI SQ	0.33	1.57	
4	OBSERVED	314	68	382
	EXPECTED	315.97	66.03	
	CELL CHI SQ	0.01	0.06	
5	OBSERVED	40	14	54
	EXPECTED	44.67	9.33	
	CELL CHI SQ	0.49	2.33	
COLUMN TOTALS		1249	261	1510

OVERALL CHI SQUARE 4.977
P VALUE 0.2897
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 15 - The current program is administered fairly.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q15A	Q15B	ROW TOTALS
1	OBSERVED	278	32	310
	EXPECTED	256.93	53.07	
	CELL CHI SQ	1.73	8.37	
2	OBSERVED	404	41	445
	EXPECTED	368.82	76.18	
	CELL CHI SQ	3.36	16.25	
3	OBSERVED	219	52	271
	EXPECTED	224.60	46.40	
	CELL CHI SQ	0.14	0.68	
4	OBSERVED	310	118	428
	EXPECTED	354.73	73.27	
	CELL CHI SQ	5.64	27.30	
5	OBSERVED	38	15	53
	EXPECTED	43.93	9.07	
	CELL CHI SQ	0.80	3.87	
COLUMN TOTALS		1249	258	1507

OVERALL CHI SQUARE 68.13
P VALUE 0.0000
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 16 - Is the current program a good test of fitness?

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q16A	Q16B	ROW TOTALS
1	OBSERVED	310	51	361
	EXPECTED	296.01	64.99	
	CELL CHI SQ	0.66	3.01	
2	OBSERVED	501	111	612
	EXPECTED	501.82	110.18	
	CELL CHI SQ	0.00	0.01	
3	OBSERVED	174	51	225
	EXPECTED	184.49	40.51	
	CELL CHI SQ	0.60	2.72	
4	OBSERVED	232	53	285
	EXPECTED	233.69	51.31	
	CELL CHI SQ	0.01	0.06	
5	OBSERVED	31	8	39
	EXPECTED	31.98	7.02	
	CELL CHI SQ	0.03	0.14	
COLUMN TOTALS		1248	274	1522

OVERALL CHI SQUARE 7.230
P VALUE 0.1242
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 17 - Ease of administration and use of manpower.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q17A	Q17B	ROW TOTALS
1	OBSERVED	34	3	37
	EXPECTED	30.36	6.64	
	CELL CHI SQ	0.44	2.00	
2	OBSERVED	81	10	91
	EXPECTED	74.67	16.33	
	CELL CHI SQ	0.54	2.46	
3	OBSERVED	124	44	168
	EXPECTED	137.85	30.15	
	CELL CHI SQ	1.39	6.36	
4	OBSERVED	851	176	1027
	EXPECTED	842.67	184.33	
	CELL CHI SQ	0.08	0.38	
5	OBSERVED	158	40	198
	EXPECTED	162.46	35.54	
	CELL CHI SQ	0.12	0.56	
COLUMN TOTALS		1248	273	1521

OVERALL CHI SQUARE 14.32
P VALUE 0.0064
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 18 - Does the current program maintain fitness throughout the year?

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q18A	Q18B	ROW TOTALS
1	OBSERVED	632	118	750
	EXPECTED	611.85	138.15	
	CELL CHI SQ	0.66	2.94	
2	OBSERVED	483	123	606
	EXPECTED	494.38	111.62	
	CELL CHI SQ	0.26	1.16	
3	OBSERVED	68	23	91
	EXPECTED	74.24	16.76	
	CELL CHI SQ	0.52	2.32	
4	OBSERVED	51	15	66
	EXPECTED	53.84	12.16	
	CELL CHI SQ	0.15	0.66	
5	OBSERVED	15	3	18
	EXPECTED	14.68	3.32	
	CELL CHI SQ	0.01	0.03	
COLUMN TOTALS		1249	282	1531

OVERALL CHI SQUARE 8.721
P VALUE 0.0685
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 19 - The importance of unit commander support.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q19A	Q19B	ROW TOTALS
1	OBSERVED	96	21	117
	EXPECTED	95.66	21.34	
	CELL CHI SQ	0.00	0.01	
2	OBSERVED	272	45	317
	EXPECTED	259.19	57.81	
	CELL CHI SQ	0.63	2.84	
3	OBSERVED	205	72	277
	EXPECTED	226.49	50.51	
	CELL CHI SQ	2.04	9.14	
4	OBSERVED	515	111	626
	EXPECTED	511.85	114.15	
	CELL CHI SQ	0.02	0.09	
5	OBSERVED	163	30	193
	EXPECTED	157.81	35.19	
	CELL CHI SQ	0.17	0.77	
COLUMN TOTALS		1251	279	1530

OVERALL CHI SQUARE 15.70
P VALUE 0.0034
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 23 - Testing every 6 months causes excess lost duty time.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q23A	Q23B	ROW TOTALS
1	OBSERVED	391	84	475
	EXPECTED	388.52	86.48	
	CELL CHI SQ	0.02	0.07	
2	OBSERVED	598	122	720
	EXPECTED	588.92	131.08	
	CELL CHI SQ	0.14	0.63	
3	OBSERVED	121	42	163
	EXPECTED	133.32	29.68	
	CELL CHI SQ	1.14	5.12	
4	OBSERVED	101	23	124
	EXPECTED	101.43	22.57	
	CELL CHI SQ	0.00	0.01	
5	OBSERVED	38	7	45
	EXPECTED	36.81	8.19	
	CELL CHI SQ	0.04	0.17	
COLUMN TOTALS		1249	278	1527

OVERALL CHI SQUARE 7.536
P VALUE 0.1192
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 24 - Testing every 3 months causes excess lost duty time.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q24A	Q24B	ROW TOTALS
1	OBSERVED	287	61	348
	EXPECTED	283.86	64.14	
	CELL CHI SQ	0.03	0.15	
2	OBSERVED	444	84	528
	EXPECTED	430.68	97.32	
	CELL CHI SQ	0.41	1.82	
3	OBSERVED	179	54	233
	EXPECTED	190.05	42.95	
	CELL CHI SQ	0.64	2.85	
4	OBSERVED	230	52	282
	EXPECTED	230.02	51.98	
	CELL CHI SQ	0.00	0.00	
5	OBSERVED	108	31	139
	EXPECTED	113.38	25.62	
	CELL CHI SQ	0.26	1.13	
COLUMN TOTALS		1248	282	1530

OVERALL CHI SQUARE 7.297
P VALUE 0.1210
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 25 - Add push-ups for men.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q25A	Q25B	ROW TOTALS
1	OBSERVED	172	28	200
	EXPECTED	163.08	36.92	
	CELL CHI SQ	0.49	2.16	
2	OBSERVED	235	70	305
	EXPECTED	248.70	56.30	
	CELL CHI SQ	0.75	3.33	
3	OBSERVED	149	53	202
	EXPECTED	164.71	37.29	
	CELL CHI SQ	1.50	6.62	
4	OBSERVED	515	99	614
	EXPECTED	500.65	113.35	
	CELL CHI SQ	0.41	1.82	
5	OBSERVED	179	33	212
	EXPECTED	172.86	39.14	
	CELL CHI SQ	0.22	0.96	
COLUMN TOTALS		1250	283	1533

OVERALL CHI SQUARE 18.25
P VALUE 0.0011
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 26 - Add push-ups for women.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q26A	Q26B	ROW TOTALS
1	OBSERVED	173	34	207
	EXPECTED	170.21	36.79	
	CELL CHI SQ	0.05	0.21	
2	OBSERVED	255	69	324
	EXPECTED	266.41	57.59	
	CELL CHI SQ	0.49	2.26	
3	OBSERVED	200	47	247
	EXPECTED	203.10	43.90	
	CELL CHI SQ	0.05	0.22	
4	OBSERVED	464	94	558
	EXPECTED	458.82	99.18	
	CELL CHI SQ	0.06	0.27	
5	OBSERVED	157	26	183
	EXPECTED	150.47	32.53	
	CELL CHI SQ	0.28	1.31	
COLUMN TOTALS		1249	270	1519

OVERALL CHI SQUARE 5.195
P VALUE 0.2678
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 27 - Add sit-ups for men.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q27A	Q27B	ROW TOTALS
1	OBSERVED	146	33	179
	EXPECTED	146.03	32.97	
	CELL CHI SQ	0.00	0.00	
2	OBSERVED	210	58	268
	EXPECTED	218.64	49.36	
	CELL CHI SQ	0.34	1.51	
3	OBSERVED	135	47	182
	EXPECTED	148.48	33.52	
	CELL CHI SQ	1.22	5.42	
4	OBSERVED	558	108	666
	EXPECTED	543.33	122.67	
	CELL CHI SQ	0.40	1.75	
5	OBSERVED	200	36	236
	EXPECTED	192.53	43.47	
	CELL CHI SQ	0.29	1.28	
COLUMN TOTALS		1249	282	1531

OVERALL CHI SQUARE 12.22
P VALUE 0.0158
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 28 - Add sit-ups for women.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q28A	Q28B	ROW TOTALS
1	OBSERVED	141	33	174
	EXPECTED	142.90	31.10	
	CELL CHI SQ	0.03	0.12	
2	OBSERVED	207	57	264
	EXPECTED	216.82	47.18	
	CELL CHI SQ	0.44	2.04	
3	OBSERVED	173	44	217
	EXPECTED	178.22	38.78	
	CELL CHI SQ	0.15	0.70	
4	OBSERVED	541	106	647
	EXPECTED	531.37	115.63	
	CELL CHI SQ	0.17	0.80	
5	OBSERVED	188	32	220
	EXPECTED	180.68	39.32	
	CELL CHI SQ	0.30	1.36	
COLUMN TOTALS		1250	272	1522

OVERALL CHI SQUARE 6.120
P VALUE 0.1904
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 29 - Adding push-ups will cause problems.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q29A	Q29B	ROW TOTALS
1	OBSERVED	321	73	394
	EXPECTED	322.90	71.10	
	CELL CHI SQ	0.01	0.05	
2	OBSERVED	581	129	710
	EXPECTED	581.88	128.12	
	CELL CHI SQ	0.00	0.01	
3	OBSERVED	203	54	257
	EXPECTED	210.63	46.37	
	CELL CHI SQ	0.28	1.25	
4	OBSERVED	101	9	110
	EXPECTED	90.15	19.85	
	CELL CHI SQ	1.31	5.93	
5	OBSERVED	43	10	53
	EXPECTED	43.44	9.56	
	CELL CHI SQ	0.00	0.02	
COLUMN TOTALS		1249	275	1524

OVERALL CHI SQUARE 8.859
P VALUE 0.0647
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 30 - Adding sit-ups will cause problems.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q30A	Q30B	ROW TOTALS
1	OBSERVED	331	73	404
	EXPECTED	331.10	72.90	
	CELL CHI SQ	0.00	0.00	
2	OBSERVED	578	127	705
	EXPECTED	577.79	127.21	
	CELL CHI SQ	0.00	0.00	
3	OBSERVED	199	56	255
	EXPECTED	208.99	46.01	
	CELL CHI SQ	0.48	2.17	
4	OBSERVED	96	8	104
	EXPECTED	85.23	18.77	
	CELL CHI SQ	1.36	6.18	
5	OBSERVED	45	11	56
	EXPECTED	45.90	10.10	
	CELL CHI SQ	0.02	0.08	
COLUMN TOTALS		1249	275	1524

OVERALL CHI SQUARE 10.28
P VALUE 0.0360
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 31 - Mandatory reporting of fitness would improve fitness.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q31A	Q31B	ROW TOTALS
1	OBSERVED	467	114	581
	EXPECTED	474.84	106.16	
	CELL CHI SQ	0.13	0.58	
2	OBSERVED	272	73	345
	EXPECTED	281.96	63.04	
	CELL CHI SQ	0.35	1.58	
3	OBSERVED	126	26	152
	EXPECTED	124.23	27.77	
	CELL CHI SQ	0.03	0.11	
4	OBSERVED	262	40	302
	EXPECTED	246.82	55.18	
	CELL CHI SQ	0.93	4.18	
5	OBSERVED	121	26	147
	EXPECTED	120.14	26.86	
	CELL CHI SQ	0.01	0.03	
COLUMN TOTALS		1248	279	1527

OVERALL CHI SQUARE 7.918
P VALUE 0.0946
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 33 - Reasonable use of duty time would improvr fitness.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q33A	Q33B	ROW TOTALS
1	OBSERVED	43	3	46
	EXPECTED	37.66	8.34	
	CELL CHI SQ	0.76	3.42	
2	OBSERVED	96	12	108
	EXPECTED	88.42	19.58	
	CELL CHI SQ	0.65	2.94	
3	OBSERVED	81	13	94
	EXPECTED	76.95	17.05	
	CELL CHI SQ	0.21	0.96	
4	OBSERVED	622	129	751
	EXPECTED	614.81	136.19	
	CELL CHI SQ	0.08	0.38	
5	OBSERVED	404	119	523
	EXPECTED	428.16	94.84	
	CELL CHI SQ	1.36	6.15	
COLUMN TOTALS		1246	276	1522

OVERALL CHI SQUARE 16.92
P VALUE 0.0020
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 34 - Use of rewards and recognition would improve fitness.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q34A	Q34B	ROW TOTALS
1	OBSERVED	81	17	98
	EXPECTED	80.28	17.72	
	CELL CHI SQ	0.01	0.03	
2	OBSERVED	245	36	281
	EXPECTED	230.19	50.81	
	CELL CHI SQ	0.95	4.31	
3	OBSERVED	213	65	278
	EXPECTED	227.74	50.26	
	CELL CHI SQ	0.95	4.32	
4	OBSERVED	510	103	613
	EXPECTED	502.17	110.83	
	CELL CHI SQ	0.12	0.55	
5	OBSERVED	197	54	251
	EXPECTED	205.62	45.38	
	CELL CHI SQ	0.36	1.64	
COLUMN TOTALS		1246	275	1521

OVERALL CHI SQUARE 13.25
P VALUE 0.0101
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 35 - Use of regular voluntary workouts.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q35A	Q35B	ROW TOTALS
1	OBSERVED	104	14	118
	EXPECTED	96.57	21.43	
	CELL CHI SQ	0.57	2.57	
2	OBSERVED	307	48	355
	EXPECTED	290.54	64.46	
	CELL CHI SQ	0.93	4.20	
3	OBSERVED	173	46	219
	EXPECTED	179.23	39.77	
	CELL CHI SQ	0.22	0.98	
4	OBSERVED	532	114	646
	EXPECTED	528.70	117.30	
	CELL CHI SQ	0.02	0.09	
5	OBSERVED	128	54	182
	EXPECTED	148.95	33.05	
	CELL CHI SQ	2.95	13.28	
COLUMN TOTALS		1244	276	1520

OVERALL CHI SQUARE 25.82
P VALUE 0.0000
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

Question 36 - Use of regular mandatory workouts.

CHI SQUARE TEST FOR HETEROGENEITY OR INDEPENDENCE

CASE		VARIABLE Q36A	Q36B	ROW TOTALS
1	OBSERVED	163	40	203
	EXPECTED	165.62	37.38	
	CELL CHI SQ	0.04	0.18	
2	OBSERVED	260	83	343
	EXPECTED	279.83	63.17	
	CELL CHI SQ	1.41	6.23	
3	OBSERVED	197	36	233
	EXPECTED	190.09	42.91	
	CELL CHI SQ	0.25	1.11	
4	OBSERVED	376	63	439
	EXPECTED	358.15	80.85	
	CELL CHI SQ	0.89	3.94	
5	OBSERVED	240	57	297
	EXPECTED	242.30	54.70	
	CELL CHI SQ	0.02	0.10	
COLUMN TOTALS		1236	279	1515

OVERALL CHI SQUARE 14.17
P VALUE 0.0068
DEGREES OF FREEDOM 4

CASES INCLUDED 10 MISSING CASES 0

APPENDIX C:

Survey Respondents Individual Comments

1. The problem one encounters in trying to have a fitness program is coming up with a standard that is achievable yet ensures proper fitness. The current standard is too easy, a requirement that people walk 1.5 miles in a specified time is just not taken seriously in the AF. A sit-up/push up standard should also apply. This survey seems to indicate the AF is aware of the need for the use of duty time for physical fitness, this is a must if we are serious about getting everyone in shape. Mandatory PT sessions are necessary. Voluntary sessions will only benefit personnel that are not in shape. These PT sessions should emphasize sports to build a more competitive nature. It seems to me that out of shape people are not very competitive or enthusiastic. Older people are given too many concessions due to their age. The AF allows age to be an excuse for being out of shape. My father made his last aerobic run walking backwards. The current standards do not force people to exercise so a mandatory PT sessions would be beneficial anything mandatory will be met with skepticism and will probably demotivate some people. I think physical fitness is necessary, but does not directly transfer to job performance. Therefore, it should not be on an OER even though it is probably the best method to increase physical fitness throughout the AF and is not at the discression of commanders.

2. Except for 33-36, the survey seems to be focusing on "testing in fitness" just like you must build quality in not inspect it in, the annual aerobics run/walk is totally ineffective apart from units strongly encouraging regular physical conditioning. Rather than pushing aerobics, possibly sports days intramurals between squadrons, and intra-unit competitions games would painlessly encourage conditioning. The AF must get away from a once per year fitness program! It's full time.

3. The walk/run test should be given every 3-6 months to avoid the problem of people disregarding fitness over winter months. I support lowering the walk/run times versus adding push-ups and sit-ups to the fitness program. I believe adding push-ups and sit-ups will cause a plethora of administrative problems as people seek waivers from the base doctors due to shoulder, arm, hand, back, neck, etc. problems. This will cause a gross waste of personal time. From my own conditioning program I've realized that if I perform proper aerobic exercise by just walking or jogging my whole body is conditioned and muscle tone is enhanced throughout. I believe this type of conditioning is sufficient for military personnel with no need for concentration on other selected muscle groups.

4. Fitness, in general should be stressed not just speed of run/ pushups/ situps. Physical activity like volleyball, softball, and baseball should be included as part of a program not just run/sit-up/push-up.

5. Women should face the same standards as men unless they are willing to accept reduced pay! "Equal pay for equal performance" If they can't perform equally well in peacetime; they will be a burden during war.

6. Sit-ups can cause severe strain to the back.

7. I would run 7 days a week if I had the time. TDY's, rotten weather, and 70-plus hour work weeks reduce my opportunities to 3-4 times per week. Regularly scheduled workouts would help me to legally take time away from my regular duty time regimen. Fitness testing is not the solution; scheduled unit workouts is a better idea by far!

8. I asked around in my office for some opinions. They mostly agreed that a squadron run about once a month or once every quarter (not tested) would improve time. Running in a formation encourages teamwork encouragement, and semi-competitive feeling. Then test annually. Overall, I feel both the time for the run and the option for the walk should be left the same. Some members are built for endurance others for strength. Personally I am built for endurance and limberness I prefer walking over running . I do allot better walking over running. I do a lot better walking I feel more refreshed, my mind is clearer, I feel better walking than I do running. I have several friends who agree on that aspect. Thank you for your interest in our opinion I hope you receive adequate information.

9. Allow minimum of one hour per day for aerobics exercise.

10. Making some improvements in the availability and quality of physical fitness facilities throughout the AF would aid tremendously in improving the overall fitness of Air Force members.

11. Access to lockers/showers can be a problem for people who want lunchtime workouts. Reserved lockers at Dodge Gym, Hilltop Gym, and Area b health club should be converted to daily use so then people can use these facilities instead of going to a far off facility.

12. Additional tests of fitness such as bicycling and swimming should be available to substitute for running/walking. Satisfactory completion of 1.5 mile run is too high. The time for men should be reduced by 1:00 to 1:30 minutes and women by 1:30 to 2:00 minutes. Tests at six month intervals weather permitting would encourage better fitness. Testing at three months becomes too time consuming and creates problems with scheduling and relocations especially on large bases.

13. The current weight program doesn't take into consideration individual body build. Depending on your commander this could be detrimental. ATC for example, has a written policy of no weight waivers. AFROTC has a unwritten policy that all members will be 10 pounds below there maximum allowable weight and this doesn't take into consideration weight, blood pressure, run times, strength, and aerobic fitness.

14. If the Air Force physical fitness program is to work, it must be an active part of everyone's weekly schedule. Standards should be increased , but if your looking for endurance (which is the type of activity overall wartime conditions would require) then test for endurance. How long can a person run versus in what time, how many sit-ups versus how many in a minute. If the Air Force is really serious about physical fitness, then the time spent testing and training is not really "lost" time, but quality training time. New standards should not be enforced over night. Start with quarterly testing to a lesser than goal level until 80-90% of the individual can pass, then increase the standards in graduated increments until the final goal of a physically fit airman is achieved. Setting too high a goal will demotivate individuals; however, realistic goals will encourage and motivate with equal amounts of esprit de coup and promote healthy competition.

15. The public expects the military to be able to fight and win any war we engage into; currently our force would require drastic changes in order to accomplish this. The public has an image of a lean and mean fighting machine.

16. Time is not made available in a busy work schedule. Commanders ignore fitness guidelines in regulations and pay lip service to the use of duty for exercise. Annual testing without a program to encourage regular fitness training is hazardous to peoples health. I personally know of 2 deaths due to annual testing. If physical fitness is important, make duty time available for training.

17. The implementation of the weight management program for people over their limit needs to be more forceful. I see too many "overweight" people who professionally look bad. I think putting results of physical fitness tests in peoples records is a great idea.

18. More people get hurt with once a year aerobics. I feel that it should be done monthly or not at all. Allow people to take a 2 hour lunch, if they participate in a aerobics program part of the time.

19. I do not feel the run is really a valid test of someone's fitness. I have problems with my knees, not bad enough so I don't have to run, but enough to slow me down. This does not mean I'm not aerobically fit. An atmosphere of working together toward better fitness would be effective. I feel a better attitude and encouragement to becoming more fit is the key to better overall AF personnel fitness, not more or stricter testing.

20. An effective method of improving fitness is to have mandatory runs or exercise periods after duty or during duty hours for everyone who does not meet the desired level. These people would be required to attend these runs of fitness assemblies until they meet the desired level. This worked very well in one of my units.

21. I think a scheduled workout of different types would be appropriate (Don't make the workout running for everyone). The army has a system that earns points based on what exercise (walking, running, tennis, bowling, bicycling) the individual does and has a minimum weekly total to meet. If this is administered at unit level it shouldn't be all that difficult. Our organization has a voluntary system where you report your activities to earn points for sub organization competition this seems to work well. You can decrease times, add situps and push ups to the aerobics test but I don't think it will change the behavior. The behavior changes must originate at the unit level in cooperation with all in unit.

22. Physical fitness programs should be promoted as personal improvements on fitness not as competitive (Air Force member against Air Force member). Most Air Force jobs do not require extremely competitive athletes. Physical skills should in balance with mental skills. Any changes in this area should keep in mind. I was never encouraged or trained to do push-ups in high school in college and until now in the Air Force. Things such as this should not be presented as a pass/fail could cause health problems until society, high schools, and colleges catchup. I think the way situps were done in OTS probably damaged my health (back spine).

23. I do not feel that testing is the answer nor is giving duty time for physical fitness training a key point. I do feel the attitude of an individuals supervisor is the single most important factor in maintaining a regular fitness training schedule. I currently work directly for a general officer who does little fitness training. My work hours are normally 07:00 - 18:30, and I eat lunch at my desk. I really feel guilty if I go to the gym during lunch when I have a stack of paperwork on my desk. Consequently, I'm paying dues on a gym locker I use once a month. I'm normally a very active runner and self motivation for physical fitness is not a problem. My supervisor neither discourages nor encourages aerobics. However, I sense pressure that the mission comes first over an individuals personal physical fitness.

24. Basically I feel that there are too many Air Force personnel who do not project a professional imagine. When I walk around I see many officers with what looks like an inner-tube around their waist. A lot of them also smoke which I feel also takes away from the image of the Armed Forces. If people can't take pride in their appearance, take the time to look good, then how can we feel safe that they are performing their jobs in a professional manner.

25. I do not believe a muscular strength test (in the form of sit-ups and push-ups) should be administered, since such a test could not take into account different body types (endomorph, mesomorph. ectomorph) and proportions. For example, given two individuals of same height and abdominal strength, the person with the longer legs will be able to out perform the other in sit-ups but due to the shorter torque arm required to rotate his upper body from horizontal to vertical.

26. I suggest time spent during the week for physical training should be credit enough for not having to do an annual fitness test. Those who accumulate insufficient hours of training time for the year would then be required to take the test. The person's weekly training should be self paced, and in an area of personal interest (running, weights, basketball) allowing credit toward fitness test exemption.

27. I hope the results of this survey lead to a new physical fitness test. Currently many members begin "practicing" 1-2 months before the run and then stop immediately afterwards. During the winter months (at bases with significant inclement weather) would be a good time to schedule a fitness test. Indoor jogging aerobic facilities would tremendously increase physical fitness levels. Mandatory physical fitness workouts will improve physical fitness. However, it would probably "turn off" Air Force members with a marginal attitude toward fitness and they're the ones who need a fitness routine the most.

28. A 1.5 mile run administered once or ten times a year does not prove physical fitness. Physical fitness is more than an aerobic test which anyone should be able to complete. Personnel should be encouraged to be physically fit by being given time for working out at the gym swimming, jogging, basketball, or the like. A test of physical condition should be a measurement of your waist as compared to your height or chest size, not the fact that you can endure 15 minutes of pain once a year to pass the run test.

29. Assuming personnel will exercise after working 10-12 hours a day is a joke. Exercise should be done daily on government time if the Air Force is serious about ensuring individuals stay in shape. The weight control program is too punitive in driving out those individuals who may be few pounds over a generic weight chart but have a good medical history and perform their duties as well or better than others inclined to be slender. If the Air Force applied these standards during a war, some Air Force members would overeat in order to receive an administrative discharge. This program wouldn't have worked during the Vietnam conflict so I don't think it will work in some future protracted war.

30. If physical fitness is to be an integral part of Air Force standards, then unit commanders must provide the use of duty time to encourage participation. This step must take place in advance of any increase in difficulty of the Air Force physical fitness standards. We must change the philosophy of fitness with sufficient lead time to allow personnel to adapt to a change of life style. Additionally, the current annual aerobic run does not prove or disprove a person's fitness and in light of recent medical recommendations that brisk walking is healthier than jogging. We should not prematurely require the Air Force to become a population of joggers.

31. I personally feel that the weight vs height system is way out of bounds. Just because someone weighs more than someone else does not make him overweight. You should at least consider using body fat count or some similar process to eliminate this problem. A weight lifter, for instance, can easily go over your set weight limit while still being in perfect physical condition. while a short stubby person can be within his weight limit and be in horrible condition.

32. In the use of duty time, we need to have a full time fitness instructor work with each individual to set up an exercise program that is tailored to that individuals strengths/weakness. Also need to have someone show individuals how nautilus equipment operates and how to effectively use them in your individual exercise program. Individual motivation by itself does not work for everyone. Need the support of commanders and I would like to see duty time (about 2.5 hours per week devoted for physical training for both military and civilians). I can see rewards being given to the same individual week after week to the same person who is physically fit.

33. I would like to see a choice of aerobic testing. For instance, in the Navy you can run, walk or swim your aerobics. I don't think fitness testing results should be reported on OERs or APRs. If reported all that should be indicated is if the person passed or failed. Testing a person once a year is not a food measure of that persons physical fitness. All it measures is if the person can run a mile and a half. For many, it will be the only time they put on sneakers during the year. Increased testing would give some incentive to keep in shape. What will adding sit-ups and push-ups accomplish? How much strength does one need to push a pencil and what happens when a person flunks? If the Air Force is serious about physical fitness forget about the testing set up mandatory PT three times a week lead by the 0-6's. This is to ensure all AF members stay fit.

34. In order for a physical fitness program to be successful it must set realistic standards and then a mechanism to obtain the standards must be made available to the individual. Duty time should be made available to the service member on a regular basis. To obtain physical fitness goals they must be measured on a regular basis. Educating the member to the benefits of regular exercise should also be mandatory.

35. In the military/civilian environment there is a tendency in some organizations to require all physical training done on run-duty time. If your supervisor allows you extra time at lunch, that time is to be made up. Physically fitness is a part of our duty as I see it.

36. Concept of reporting fitness on OER sucks. There are those who finally walk into work at 0830 hit the gym at 11:30 eat lunch 13:00 - 14:00 then go home at 16:00. Oh they are fit but their productivity is worthless. On the other hand you get workaholics.

37. My case is that I have always been within 10% of my maximum weight and that I usually begin to exercise 2 months prior to the 1.5 mile run (annually). I would enjoy and participate in unit workouts or unit team sports if made more readily available. At the present I would enjoy running during duty hours if I knew that I had two two-hour periods a week I could use for exercise (without feeling intimidated for missing work). I feel that a total of 2.5 hours is not realistic however by the time I have gotten in my car, travel to and from hilltop gym, exercised 30 minutes showered and dressed it usually takes me up to 2 hours.

38. The Air Force stresses physical fitness, but I see many O-4s, O-5s, and O-6s as well as Ssgts, Tsgts, and Msgts whose physical appearance suggests pizza and beer consumptions more favorable than exercise. All overweight military should be in a mandatory once a week run. Appearance means a lot in the public perception of the military ands overweight appearance connotates sloppiness.

39. Forcing people to maintain fitness is not the answer unless they fall below standards (fat boy programs ok). Mandatory reporting would demotivate personnel. If test results went on APRs it would probably make most people mad enough to separate at the earliest possible opportunity. Job performance only is what OER/APR are for. Fitness test results do not belong. The guys getting the days off will be the jocks. I'm right at my ideal weight run the 1.5 mile in the good time and maintain a reasonable level of fitness. I feel it would be very unfair to reward superior performance.

40. Standards on proper body weight are very ineffective. Some personnel look overweight yet meet the height/weight standards and others especially large framed or muscular look great and are in great shape, but are very close to there limit. The idea is to promote health and insure a proper image in uniform. There must be flexibility for unit commander's discression either way.

41. Test structure was curious and a little confusing. Typical test answers are arranged differently than yours. "Strongly agree" starts with "a" and "strongly disagree" is at "e" Yours were reversed which I found distracting. About the AF physical fitness program basically a joke. How are people supposed to be motivated to stay in shape when they are only required to be measured/evaluated once a year? All the facilities are available at most AF bases to get in shape but the reality of the job situation is that supervisors either frown on taking that extra half hour during the day to work out, or they load so much work that it's impossible to break away. The best way to get people in shape would be to evaluate them more often. Make physical training an integrated part of AF activities like the Army and Marine Corps do.

42. Wake up and smell the coffee guys. Just open your eyes and look around at ASD, 8 out of 10 AF personnel appear overweight. The small group that takes fitness seriously is a small minority. Calling one 1.5 mile run a year the AF fitness program is a joke. In my final analysis I'm often ashamed because of the level of fitness of fellow Air Force personnel; there is no program just individual motivation.

43. I believe the current system does not adequately test fitness levels. Once a year tests are detrimental to the individual who does not stay fit year round. More frequent tests would require people to maintain fitness year round. Also running is detrimental to many people. Swimming should be added and cycling if possible. Sit-ups too are detrimental to many people because they can create back strain. Variations of sit-ups could be used in place of those type sit-ups. Push-ups do not prove fitness; however, some muscle strengthening exercises should be considered. I believe commanders play a critical role in pushing fitness programs. However, unless someone tells them to do so, the unit commanders probably will not push fitness programs.

44. I've never seen unit workouts; but they would be very beneficial.

45. I think an aerobics program would help more people get motivated to exercise. If the Air Force is serious about the program there should be more than 2.5 hours of PT time during the week. It takes most people 30 minutes to get to the gym and change. If a mandatory PT requirement is set up there should be sign in and out sheets at the gyms so people can go anytime during the day instead of at a specific time and place. I'm not really sure how I fell about adding push-ups and sit-ups to the aerobics test. If total strength is being assessed maybe they should play a part.

46. I'd like to see some fitness activities organized by the Air Force free to all members on base. For example, aerobic dance or weight training offered to members during lunch or after work hours.

47. I believe the fitness test, as it stands today, is of little value and should be removed or improved. Few people (estimate less than 5%) must work out on a regular basis prior to the test in order to pass. However, a large percentage of people seem to "die" following the test. Therefore, the test seems to show that few people are in shape for a combat situation and, since practically everyone passes, there is no reason to improve personal fitness (aside from personal motivation). If you agree with the above, the test should be structured such that the "average person" (50% of the active duty force) must get fit in order to pass. It should also be given often enough to ensure this level of fitness is constantly maintained as opposed to only two or three months out of the year. This ensures the entire force is physically fit to go into a war time situation throughout the year. Finally, our test is suppose to test for aerobic fitness which is defined as "one where the heart rate is raised to 75-85% of maximum for at least 20 minutes". Yet our test requirements only require the heart rate to be elevated for 14-17 minutes . Seems absurd to me. Suggest the following for a test (for a male less than 30 years old): 2.5 miles in 20 minutes administered every 3 to 6 months. Times for females and other ages should be adjusted accordingly.

48. The Air Force needs more stringent standards so that people exercise year round not just once a year at the annual aerobics run.

49. I am not aware whether the use of duty time for exercise is currently be permitted. If it is, it should be more publicized. I just came on active duty and in-processing might be a place to integrate a briefing about this.

50. We need less talk about physical fitness and more equipment and space dedicated to maintaining good conditioning. How about each of the bigger SPO's having their own work-out center? This way there would be more places to work out with less crowding.

51. Too much emphasis is placed on weight management. Not enough is on overall physical fitness (strength aerobics endurance). A better program would emphasize these latter things more. It is pretty ridiculous when someone who rates "superior" by this surveys aerobic definitions is considered overweight while someone who barely makes the time, but is more than 10% under their maximum weight, is ok. Emphasis on strength and endurance would be a fairer representation of true physical fitness.

52. Time allotment for physical training should be a mandatory part of the normal duty week for all personnel. This issue is most important to those of us in an office environment on busy schedules. Also, within a civilian populated office military personnel are often informally chastised for taking time away from work to take part in PT.

53. Focus on weight and the mile run are not true indicators alone. Sit-ups, push-ups also don't add needed dimension. Peer pressure should be best means to ensure fitness (Army approach).

54. Individuals will get more out of an exercise program if they do activities they enjoy (basketball, running, racketball). Instead of mandatory push-ups and sit-ups. Also push-up and sit-ups don't necessarily measure a person's endurance. Perhaps testing could be developed for other activities since not everyone is a great runner (such as swimming or cycling). Is 2.5 hours a reasonable amount of time once you take into account travel to and from the gym and time to shower? I take exception to how you base fitness levels. A person may have a slow run time but still be in excellent or superior physical condition.

55. Given the physical fitness tests are currently a requirement for active duty military, why is it that a base like Wright Patterson with no less than 3 gyms does not provide one or more for the exclusive use of the active duty hours? The gyms are so crowded with dependents and civilians that I cant get a locker to use. I have been chased off the hilltop basketball court for jogging indoors yet they have basketball aerobics classes and Tikwondo there every night. If we will be required to perform to certain standards then we should have dedicated facilities EXCLUSIVELY FOR THE USE

OF ACTIVE DUTY PERSONNEL!! I believe a lot of people don't use the gym because of this reason. If we had a place to go and encouragement to participate we'd be in a lot better shape. I also believe that a 1.5 mile run is too easy. Most people go out and just run as fast as they can one day a year. You can sprint if you have to. I recommend changing it to 3 mile run and doing away with the 3 mile walk entirely. Come on is this the military or what? In case of war, we wont have six weeks to train to get into shape. We'll be lucky if we have 6 hours. Those who can't cut it should be kicked out. I don't want my life to depend on some guy who cant even run a mile and a half. All the other services have much tougher requirements. Why should we be any different?

56. Testing should be eliminated totally. Time everyday or 3 time a week should be provided for mandatory exercise with unit. A unit requirement to run a minimum of 5 miles per week or bicycle 10 miles or swim x numbers of laps or attend 3 aerobic classes a week. TDY is no excuse. The goal is to have regular exercise.

57. On OPRs and APRs just indicate meets standard or does not meet standard. A regulation should specify the amount of duty time (about 2.5 hours week) that is authorized for physical training. This would help eliminate supervisor discretion. Many civilian and military supervisors do not acknowledge importance of physical fitness and discourage it. What is the purpose of the push-up or sit-up test? What is the purpose of having a time limit? I don't feel that it should be a test of speed. Two or three minutes should be enough time for any person to perform as many push-up or sit-ups without resting. For ASD personnel, we do not know our physical requirement under wartime. Generally we are not provided the opportunity to wear chemical warfare gear.

58. Current AF fitness program is a serious joke. I have never seen such a large collection of pencil necked geeks with pot bellies. Fat rubbery toads with strings for arms hanging from their shirt sleeves doesn't indicate a fighting force to me. Women with pants so tight you can read the date of a quarter in their back pockets. I tried to workout 2.5 hours a week at my previous job, but it was strongly discouraged. Get these lazy people on a program where they have to work out at least once a week and break a sweat. Test these losers and over weight people every three months. At least these worms may look half decent and give an appearance of a fighting force.

59. One improvement to the AF fitness program would be to make nutrition diet information available at the aerobics run.

60. This could be a good program if there is no pressure placed on the individual to perform a certain level by a certain time.

61. I like the Army's policy of mandatory workouts for everybody two mornings a week. A unit would spend an hour each day doing workouts, shower and go to work. Nobody is excused. People hate it but it makes them proud of their image.

62. In ASD you are allowed 4 hours a week for physical fitness I agree that 2.5 hours is more reasonable.

63. I personally feel that aerobic fitness is not important for enhanced productivity in the AF. I recommend slightly tighter running standards and more frequent testing. Once a year is rather silly. Once a quarter is much more viable and is more likely to encourage an attitude of continued physical fitness.

64. The key is to make facilities available and time available so the pre and post workout times are minimized. Lockers and showers near your work area would also help out. Convenience is the key to the busy person.

65. The Air Force does not have a physical fitness program. A fitness program would include organized activities during business hours and in my opinion would not cut into productivity. In fact, I believe a real fitness program would contribute to improved esprit de corps.

66. My comments are very general. The Air Force fitness program and weight standards are somewhat a joke. I see overweight officers and enlisted personnel all the time; lets get serious about fitness. We are supposed to be warriors not wimps!

67. The Air Force fitness program is currently a waste of time and effort. The premise that annually running 1.5 miles in a very generous time is ludicrous. If the Air Force is sincere about a fitness program then mandatory daily exercise formations consisting of a full regiment of exercise should be the order of the day. The Air Force weight management program is also cause for concern. I have been fighting this program for my 10 years of service. I am 74 inches in height so my ideal Air Force weight is 202 pounds. My current weight is 235. Let me caveat this by saying I bench press 400 pounds and am an avid runner, normally participating in

two marathons a year. I am in excellent physical condition yet I am harassed semi-annually with weight checks and waivers requests. On the other hand I have contemporaries who look like candidates for fat farms who are 10 to 15 pounds under their maximum allowable weights. The inadequacies in this system are obvious.

68. A proper appearance is more important than being within the AF 10% line. Someone who looks good in unifcrm should only be weighed once a year. Weather conditions are a bigger consideration and where to the test in fowl weather. Only test if they look poor in uniform or could not pass the test.

69. The weight standards program needs to be reworked. Weight is in itself not a good measure of body fat or appearance or physical condition. I am 43 and run the 1.5 mile test in less than 9:30. I carry a body fat content in the teens (estimated). Yet I an within 10% of my maximum and have to weigh in every six months rather than annually. I take pride in my physical condition and therefore, consider my identification in the "10% group" an affront and an irritant.

70. From what I've observed during my tenure in the Air Force, this privilege of the use of duty time would be abused or perceived to be abused. This would create an overall negative impact on the unit.

71. The current program does not motivate the total force because only a once a year run/walk is required. Also, though some commanders encourage the use PT time, the work areas can come up with a thousand reasons why it's better for you to stay at the office and cover a phone or any busy work. It is a very big problem. So far, the only factor that commanders play in the program is administering letters of reprimands to over weight individuals and negative reactions. One base I was stationed at, the commander and 1st sergeant sponsored an aerobics class 3 days a week at the gym before work. THAT IS A MOTIVATION! They participated and encouraged those who were borderline to come out and try. It worked. I am not motivated person to even gain a prize but when I can get a buddy to work out with or see my superior making an extra effort in helping me to improve my life by just being there, it's worth more than any type of recognition that can be given. Regularly scheduled workouts are the best thing a unit can do for its people. Even if its not mandatory. Mandatory meetings will only cause rebellion and people will find excuses not to attend. It can be done before work or during lunch. No one wants to be bothered after working in a frustrating environment all day. GO FOR IT! I'll participate.

72. I absolutely dislike running; but I'll walk you into the dust! I do 35:20 for 3 miles and usually come in first in the walking test groups I'm in. Aerobic tests and strength suck! I'd rather do organized sports like at ACSC. I'm not a 20 year old combat troop, I'm a 40 year old acquisition officer and don't do much heavy lifting or endurance marching in either war or peacetime. I have a hard time getting excited about physical fitness tests that seem not to understand the difference in duty requirements.

73. The fitness program should concentrate on a regular schedule and less on low many sit-ups and push-ups a person can do in a minute. With a regular schedule the person will be able to do more repetitions when forced to exercise on a regular basis. Which means they will be in better shape. The current time requirements for the 1.5 mile run is ok, but you can't expect a person to be in shape if they run 1 time a year. We should keep the current time requirements and run on a more frequent basis.

74. It seems the Air Force is concerned with weight regardless of appearance. Large (muscular) individuals are punished in the AF regardless of how well they perform in the physical fitness test! The only thing the AF cares about is a number on a scale rather than how physically fit you are. Any one can complete the AF Run /walk time!

75. Standards have to be met but don't lose sight of intentions to become physically fit. Unit commanders must participate to be effective. Regularly scheduled fitness periods with basically the same exercises as the old system. Participation is the key and not to be a 10 minute miler.

76. Have tests more often to maintain fitness else too many people gear up for the short run and may do more harm than good.

77. I hope the trend is USAF physical fitness is not to seriously depart from that of the present. Specific time limits serve little purpose. Any reference to physical fitness on OPR/APR is ridiculous. The current OES system is nuts or fails standard and how the individual contributes to the unit team. A structured mandatory training period should be limited to those who can not meet standards. Physical fitness is only one part of the "Wellness Program." Please call if you have any questions.

78. A large number of people will be motivated to exercise more frequently only if they are tested more frequently. Therefore, I think that the most effective motivator would be more frequent aerobic fitness testing.

79. I feel that physical fitness at least in ASD isn't stressed enough. I strongly feel that quarterly 1.5 mile run and annual full up PFTs would be best.

80. This emphasis will quickly reach an area of diminishing returns. Fitness is important but most people will only tolerate so much interference in their lives and the commanders have more important problems than tracking fitness. Improved facilities and voluntary fitness activities can motivate people but even indirectly linking with the evaluation process (unless for obvious weight problems) will demotivate far more than it will achieve the AF goals!

81. The current system has no motivating factors to encourage fitness. The questions asked in your survey do not promote or raise any motivation factors. To get people into a fitness program they have got to see something in it for them and not just another required formation. That carries the feeling that I'll hurt for a day and it will be over with.

82. "Jawboning" about physical fitness is an exercise in ego satisfaction. It merely confirms the prejudice of the believers. It does not motivate the regular participatory programs which are absolute necessities to get most people started. Absentee leadership is a contradiction in terms for every endeavor PT included.

83. Most personnel either train for a few weeks prior to the test or else just go all out for one day, unless they are already serious about staying in shape. If the purpose of the test is to demonstrate aerobic fitness adding sit-ups and push-ups does nothing to enhance that A complete and accurate test of physical fitness should include measurable tests of endurance, strength, lung capacity, and other areas that truly measure a persons physical fitness. Sit-ups and push-ups do not fall into that category. The current ASD policy allows for 4 hours per week to be used for physical training. Along with the available time to exercise the proper equipment is essential. Although health clubs are one answer many personnel do not have the means or desire to join one. Instead, the effort should be placed on larger locker rooms, expanded hours, running tracks or paths, and classes to teach proper techniques.

84. The current USAF fitness program is BS! Testing once a year does next to nothing and fosters corner cutting and dangerous levels of exertion by unfit personnel. Most of us are not fit. If the USAF is planning to up the standards for fitness, Great! But if you don't include mandatory, codified by regulation weekly duty time for workouts, it'll be far worse BS than we have now! I have been on an exchange assignment with the Marines and they take their physical training very seriously. A key part of their program is a mandatory three hours of duty time per week devoted to PT. Their testing is pretty tough. We in the USAF already work far more than 40 hours a week and we take work home too. To ask us to suck up even more of our own precious time with our families to run our own training program is just too much. A lot of people will get out. I recently turned 40 and decided it was time to get back in shape. I have been swimming at least 20 laps three times a week in about 30 minutes. Heart rate equal to 140. I have already been getting complaints from my family that I'm never home!

85. Mandatory reporting of fitness would allow the fit to get fitter and the borderline individual to get discouraged because of his fitness even though he/she may be a top notch individual. Rewards for those that are fast benefits those that are naturally good at running and has nothing to do with dedication, motivation or perseverance. Voluntary workouts are ok as long as the commander is active in attendance. Otherwise people will stay at work because they think and it probably does make them look better to middle managers. Mandatory workouts do not go over well with the work force. Fitness should follow a new program like:
    1. 1.5 mile run more than once a year.
    2. sit-ups
    3. push-ups or pull-ups.

Better idea of a persons fitness is on a total point scale because some people are better at one area than another.

86. Educating people on how important physical fitness is to their well-being is more important than levying mandatory requirements.

87. The Air Force is not really serious about physical fitness. If it were, we would all be falling out to do PT on a regular basis. The Air Force is however, very serious about the weight control program. I've never seen anyone drummed out for failing the 1.5 mile run but get yourself on the weight program and lookout because you're on the way out and it doesn't matter if you can do the 1.5 run in 4 minutes. The present test is a farce that encourages a yearly soon to be semiannually

excess without for many the proper all year maintenance program. I also don't believe the senior brass do their run unless it happens to be their thing. My vote is lets do it all year as a unit. No test, no standards, no kidding, no exceptions and lets get rid of this weight control program. P.S. I'm in the under 10% category so its never been a personal problem for me.

88. The present physical fitness system needs to be revamped. You cannot impose new standards (i.e. pushups and situps) unless you have an effective program in place. Otherwise, you are going to get some people hurt. My only motivation for exercising is to keep my weight down. I have been jogging for 2 years and I am within 10% of my maximum weight. Even though I am 35 and can run the 1.5 mile in 10:00 minutes and have a resting pulse of 52 beats minute, I am considered out of shape because I am within my 10%. There must be a more meaningful way of judging physical fitness other than body weight and the 1.5 mile run. I think the whole weight standards need to be revised. Not everyone comes out of the same mold.

89. I contend there is no present fitness program all we have is fitness testing. Testing should evaluate the training program. Unfortunately we have one without the other. The Air Force "Prime Directive" is Fly, Fight, and Win. This requires warriors trained for physical fitness. Fitness training must be mandatory.

90. I'm satisfied with USAF's current fitness program. Sending 100% of captains to SOS will encourage them to develop a personal running program in their off-duty time.

91. Fitness program is based towards runners and what does this have to do with working on heavy equipment in wartime. I think the program should be well-rounded to include other factors not just running! The push-ups is a great idea. There also needs to be publicity of time-off periods each week for military personnel to participate in fitness programs. It seems like different managers see time-off to workout in different ways!

92. One of the actions a unit commander could use to improve individual fitness and fitness awareness of personnel in his/her unit is to schedule "sports day" activities (on a unit basis) and participation in the aerobic test on a unit basis-with the commanders, enthusiastic leadership and participation.

93. A valid measure of required physical condition needs to be established be it a combination of running and calisthenics, or perhaps running an obstacle course in fatigues and combat gear or a full blown physiological stress test but one thing is clear - a 1.5 mile run once a year is not a valid measure of physical condition. Hopefully, the measure would be something that the troops can clearly see relating to the requirements of military service. This would be the only way to motivate people to get and stay in shape. There are many ways to do that so mandating a particular regimen would not work. The personal health benefits of being in shape could be a real motivator to the individual.

94. Body weight should be averaged in with other factors, not a factor by itself. I run 4-5 days a week, weight lift 3-4 times a week, box, do a morning routine of sit-ups and push-ups. My weight since high school has always been within 15% of my maximum current allowable AF weight. However, I consider my fitness to be among the top 20% of the AF. Weight by itself is only a partial indicator look at the whole person. The sit-ups should be true sit-ups legs slightly bent not anchored arms crossed on the chest and then do the sit-up this method works on the stomach. Having your legs hooked under a bar defeats the purpose of doing a sit-up. I recommend 6 hours week or 1 1/2 hours a day 4 days per week. You will not see a reduction in the amount of work expected by supervisor.

95. No specific question, but is seems hard to motivate people to maintain physical fitness when their only requirement is to sit at a desk for 8 hours a day and run 1.5 miles once a year. It is also hard to see that more physical training will make me more efficient doing a desk job. The current fitness requirements are a joke. There is no job that I will have that will ever require my physical fitness; it's my mental sharpness that is needed.

96. Physical fitness level should be tied to wartime job performance. When this performance can be proven to be affected we have a problem. Otherwise, you are walking a perception tight rope of harassment and de-motivation. Weight control should take physiological body changes with age verses expecting a 50 year old to meet the weight standards of a 20 year old.

97. Please forward all surveys to the USAF Chief of Staff - General Welch. The USAF should do physical training once a week as a unit. And physical fitness testing at least every 3 months.

98. First, bodyweight vs. height standards are ridiculous as they stand now. Bodyweight percentage would give a much more reasonable measure of both appearance and fitness. For example: I have a body fat percentage of approximately 7.5%, yet I had to get a weight waiver because I was too heavy. The current standards take no account of participation in sports such as football, weight lifting, or body building where a very high level of fitness is maintained at a higher than average bodyweight height. Second, the fitness run by itself is a very poor measure of overall fitness. Certain individuals are genetically gifted with a greater member of slow twitch muscle fibers while others have predominantly fast twitch. This difference will drastically effectt one's ability to perform distance type running events. A strength test especially for upper body combined with an aerobic activity such as a VO^2 sub max test would be much more unbiased towards those with a genetic advantage towards distance running.

99. The most pressing need and best motivator is modern convenient (extended hours) and sufficient facilities on base. On Wright-Patterson facilities are horribly overcrowded especially during the winter. It is extremely difficult to get time on any court (basketball, racketball) and consequently it is difficult to stay physically fit if you don't have a personal running program. More encouragement and attention should be given to intramural and club sports (lacrosse, rugby, basketball,etc) but individual participation (open basketball) should not suffer as a result.

100. I disagree with the term "Physical Fitness Program". As far as I can tell the Air Force has a 1.5 mile run that tests to see how your wind is. I can't see how this run is an effective test of Physical Fitness. A "program" is a regular routine to achieve physical fitness.

101. This should include civilians also.

102. Current requirements for walk/run only are not a good all around indicator. I am a walker and consistently am in what would be an "excellent" area (38:00), but did not answer as such (Question is for run only.) Mandatory physical fitness is an excellent idea if all units were manned properly. Undermanned staffs with increasing work loads would make a fiasco of a mandatory system (someone is always excused for this reason or that).

103. In my career, I have seen commanders put body builders on weight programs, muscular men with a very low percentage of fat. Seems like the Air Force encourages exercise and physical fitness but not too much of it. I recommend Air Force regulations be modified to keep commanders from harassing personnel because they are too fit. Let's face it. Muscles are heavier than fat tissue. I have witnessed good people leaving the Air Force because they were body builders. Even though this is a low percentage of the force, something needs to change.

104. Physical Fitness always seems to be pushed hardest by those who can do little else well.

105. I recommend going from the MAW approach to the body fat percentage approach. This would be a much more accurate assessment of personal fitness. The current test provides motivation for fitness 2 months of the year and has no motivation to develop strength and endurance. I would thoroughly enjoy lining up the trenches against products of the current program when playing football.

106. Physical Fitness is basically a personal concern. Unit commanders should make their people aware that they have duty time to get some exercise, and encourage them to use it in this manner. Intramural sports, for all levels, should be highly encouraged. Many people (civilians and military) don't enjoy running/exercising for the sake of staying in shape, but enjoy a social game of basketball/volleyball etc. Perhaps some type of award should be given to personnel who actively participate in athletics (play intramural sports or a regular basis and represent their division, squadron, wing, base).

107. Allowing men age 20-29 14:00 minutes for the 1.5 mile run is a joke. That's not much more than a brisk walk. I find this standard personally embarrassing. Twelve minutes would be more reasonable, and should not be difficult for anyone who regularly exercises.

108. I think physical fitness is an important area that receives no recognition. I disagreed on questions 25-28 because people are almost discouraged from getting enough physical exercise now. There is no way that additional stress should be put on them. I think the current annual test reflects the Air Force's thinking on physical fitness. Anyone can pass the current test, even if they get out of breath bending over to tie their shoe laces. Until the Air Force actively promotes and encourages people to get out and exercise, don't change the current system by making it more stringent. People who take time out to exercise now are almost looked down

on as loafers who are going out to screw off while the real dedicated people are back at their desk working away. Until you can change the current thinking, just leave the test alone.

109. I think a very effective way on encouraging the Air Force community to be more physically fit is by implementing a mandatory/non mandatory physical fitness program on a regular basis without suffering for loss time. This way the weight standards will be meet, less number of people will suffer any medical problems due to over fatigue and other causes of injuries caused by irregular activities.

110. Current Air Force program doesn't adequately test aerobic fitness because it only tests 1 activity: running. There are other aerobic activities that are better for you physically and give a better understanding of physical fitness. For example, aerobic dance (AKA aerobics) is better for you and more physically variant than running. If I run 1.5 miles in 12:30 is someone who runs it in 11:30 in better physical condition? Maybe not. For example I can do a 1 hour aerobics yet because of my knees I can't run for more than 15-20 minutes to get my heart rate up to 75-85% of max. Then there are people who can run for 30-60 minutes, yet can't last more than 25 minutes in an aerobics class! The Air Force should include other types of fitness tests such as aerobics, bicycling, or swimming. Sit-ups and push-ups aren't aerobic activities per se, rather anaerobic.

111. The vast majority of AF personnel are not needed because of their upper arm or abdominal strength. They're hired for their mental skills. Will have a short term improved effect on fitness but generally carries a negative connotation, may in the.long term affect retention. A good idea but the time is inadequate. My experience is that it takes 1.0 - 1.5 hours per day to run about 30 minutes. Must take into account driving time to gym, dressing, running, showering and returning to place of work. If physical fitness is mandated during off duty hours it will have a negative connotation again. Encourage daily physical fitness but expect up to 7.5 hours of lost duty time per person participating per week. Also this won't work if the leadership up through General Officers don't support by participation.

112. 2.5 hours of duty time per week for physical training is not reasonable. Good to excellent physical fitness requires one hour each session plus another hour for travel time, time to dress, etc. Four physical fitness training sessions per week would thus require 8 hours duty time. Your question reflects the current shoddy support to physical fitness that most unit commanders exhibit. If the Air Force wants a good physical fitness program, and wants to show serious support for it to our troops---then encourage, if not demand that the troops devote that time and be willing to suffer other mission impacts associated. With everything else it is a matter of work priorities. Are we to be physically fit, mentally tough warriors, or soft-bellied paper shuffling pencil-pushers. Right now the priority of Air Force leaders seems to be the latter.

113. Don't add push-ups or sit-ups, increase the run to every 3 months.

114. What if the physical requirements met the need of the job's expected. For engineer desk jockeys virtually no requirements; for Heman pilots, lots!

115. Mandatory reporting of fitness test results on OPR's and APR's would be a very dangerous thing. It would detract from the emphasis on job performance in the OPR/APR. It would discourage average and below average personnel from improving since they would feel that no matter how hard they tried to improve, they still would not be able to compete with the top athletic performers. It could also have an effect on retention, since people in average or below average physical condition might get out rather than staying in only to be discriminated against at promotion time. Would only encourage sand-bagging in early tests in order to improve in later tests to earn rewards. Would only result in resentment at being forced to participate.

116. Physical fitness should not be a teachable item. This only insures sporadic dates on a short term basis. Rather, physical fitness should be incorporated into the daily work routine. (If the Air Force demands fitness it should provide the time). This daily fitness period should be done at a regular time by the unit or organization as a whole not only does this promote physical fitness but morale as well. What level of physical fitness are we attempting to achieve? Do we want people who look good in a swim-suit or a force which is physically prepared to meet the rigorous demands of their combat mission?

117. The USAF needs a mandatory fitness program of 2-3 times a week! It is such a joke to have fitness test once a year. Come on folks be realistic. With 2-3 times a week you don't need fitness tests.

118. I think the Air Force should promote physical fitness through positive motivation. I believe that being healthy is not only good for the individual but also benefits the unit. I don't believe the Air Force should have to test those that have a regular physical fitness program and maintain weight standards. I think everyone should have a program and should be required to maintain weight standards which are more strict than the current published standards. If the Air Force is serious about physical fitness, activities should be allowed during duty time. Air Force will. It should not have to depend on unit commanders attitude. I am not an expert but I never did understand why running or even walking has to be the tested activity. Some people are not good runners but are in good physical shape. On the other hand I've seen very heavy people that can meet Air Force running standards consistently. Personally I don't think running (1.5) adequately measures one's physical fitness neither does walking. If we must test why can't the Air Force think of alternatives to running walking?

119. We still have not gotten our act together on physical fitness weight control. The basic problem is that everyone realizes that running a 1.5 and meeting a weight standard once a year is a joke. After 20 years of watching this process, I've concluded that no one knows what we're trying to accomplish hence we have the current program. The bottom line is that healthy people are better workers (less illness less sick leave etc). We need to take the program out of the "joke" category. I'd suggest a monthly 5-mile walk/weigh-in, with a yearly cholesterol screening (self administered kits are available). Everyone should be encouraged to walk 2 miles a day voluntarily. The 5-mile walk would test that progress. As a final step smoking should be baned on every military port, school, housing-area etc. Anyone, contracting a smoking related ailment should be judged line of duty no.

120. The use of duty time for physical training is a mixed bag. Too often I have seen it abused by Air Force personnel. I have mixed emotions about this. It's up to the supervisor to ensure it is not abused, but they seldom take action when necessary.

121. Physical fitness throughout the Air Force in general is not high enough. Especially with regards to wartime situations. I have been through 20 plus exercises and know that even doing that for 4 days is enough to wear out most people. People need to be tested more often with slightly higher goals than are being used now. The testing does not interfere with work except in direct mission support areas and even then, not severely. Push-ups and sit-ups need to be added aerobic fitness is not enough. The military needs muscular fitness and strength as well.

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VITA

Captain Joel M. Zejdlik [redacted] in [redacted] He then attended the United States Air Force Academy and in 1982 received a Bachelor of Science degree in Business Management. Upon graduation, he received a commission in the USAF and has been assigned to the Aeronautical Systems Division at Wright-Patterson Air Force Base. He served as a project officer and program manager in the Advanced Tactical Engines Program office until he entered the School of Systems and Logistics, Air Force Institute of Technology, in May 1988.

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BLOCK 19. ABSTRACT

The purpose of this thesis was to investigate physical fitness attitudes and perceptions of military members in a sedentary work environment. People in the acquisition management career field assigned to Aeronautical Systems Division (ASD) Wright-Patterson AFB, Ohio were polled on their attitudes on health and fitness.

Data was collected using a survey questionnaire that duplicated a Air Command and Staff College study done in 1988. That study may have had a biased sample since fitness and aerobic exercise are stressed in Professional Military Education (PME) in residence.

This study focused on people in a non-physical working environment. The day-to-day routine did not include any useful aerobic activity. It was assumed that these people would not think fitness was as important as the people coming from a training environment (PME).

Generally, the ASD group was more polar than the PME group. The ASD group was more likely to have a large percent of the people answer strongly agree and a significant number would have no opinion, while the PME group would have a overall greater number of people who answered either agree or strongly agree with very few having no opinion. Even though the people in the sedentary working environment perceived fitness as important, they were less likely to take action to do anything about it.